Dräger

Babytherm® 8004/8010

Infant Warmer System

Operating Instructions

1-214-94

NOTICE

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Operator's Responsibility for Patient Safety

For correct and effective use of the product and in order to avoid hazards it is mandatory to carefully read and to observe all portions of this manual.

The design of the equipment, the accompanying literature, and the labeling on the equipment take into consideration that the purchase and use of the equipment are restricted to trained professionals, and that certain inherent characteristics of the equipment are known to the trained operator. Instructions, warnings, and caution statements are limited, therefore, largely to the specifics of the Dräger design.
This publication excludes references to various hazards which are obvious to a medical professional and operator of this equipment, to the consequences of product misuse, and to potentially adverse effects in patients with abnormal conditions. Product modification or misuse can be dangerous. Dräger, Inc. disclaims all liability for the consequences of product alterations or modifications, as well as for the consequences which might result from the combination of this product with other products whether supplied by Dräger or by other manufacturers if such a combination is not endorsed by Dräger, Inc.

Patient monitoring

The operators of the infant warmer system must recognize their responsibility for choosing appropriate safety monitoring that supplies adequate information on equipment performance and patient condition. Patient safety may be achieved through a wide variety of different means ranging from electronic surveillance of equipment performance and patient condition to simple, direct observation of clinical signs. The responsibility for the selection of the best level of patient monitoring lies solely with the equipment operator.

Limitation of Liability

Dräger, Inc.'s liability, whether arising out of or related to manufacture and sale of the goods, their installation, demonstration, sales representation, use, performance, or otherwise, including any liability based upon Dräger, Inc.'s Product Warranty, is subject to and limited to the exclusive terms and conditions as set forth, whether based upon breach of warranty or any other cause of action whatsoever, regardless of any fault attributable to Dräger, Inc. and regardless of the form of action (including, without limitation, breach of warranty, negligence, strict liability, or otherwise).

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Dräger, Inc. shall not be liable for, nor shall buyer be entitled to recover any special incidental, or consequential damages or for any liability incurred by buyer to any third party in any way arising out of or relating to the goods.

Warranty

All Dräger products are guaranteed to be free of defects for a period of one year from date of delivery. The following are exceptions to this warranty:

1. The defect shall be a result of workmanship or material. Defects caused by misuse, mishandling, tampering, or by modifications not authorized by Dräger, Inc. or its representatives are not covered.
2. Rubber and plastic components and materials are warranted to be free of defects at time of delivery.

Any product which proves to be defective in workmanship or material will be replaced, credited, or repaired with Dräger, Inc. holding the option. Dräger, Inc. is not responsible for deterioration, wear, or abuse. In any case, Dräger, Inc. will not be liable beyond the original selling price.

Application of this warranty is subject to the following conditions:

1. Dräger, Inc. or its authorized representative must be promptly notified, in writing, upon detection of the defective material or equipment.
2. Defective material or equipment must be returned, shipping prepaid, to Dräger or its authorized representative.
3. Examination by Dräger or its authorized representative must confirm that the defect is covered by the terms of this warranty.
4. Notification in writing, of defective material or equipment must be received by Dräger or its authorized representative no later than two (2) weeks following expiration of this warranty.

In order to assure complete protection under this warranty, the Customer Registration Card and/or Periodic Manufacturer's Service Record (if applicable) must be returned to Dräger within ten (10) days of receipt of the equipment.

The above is the sole warranty provided by Dräger, Inc. No other warranty expressed or implied is intended. Representatives of Dräger are not authorized to modify the terms of this warranty.

Dräger, Inc., Telford, PA

Definitions

WARNING !

A WARNING statement refers to conditions with a possibility of personal injury if disregarded.

CAUTION !

A CAUTION statement designates the possibility of damage to equipment if disregarded.

NOTE: A NOTE provides additional information intended to avoid inconveniences during operation.

Inspection	=	examination of actual condition
Service	=	measures to maintain specified condition
Repair	=	measures to restore specified condition
Maintenance	=	inspection, service, and repair, where necessary
Preventive Maintenance	=	Maintenance measures at regular intervals

Typing conventions in this manual

Display messages are printed in **bold** type, e. g:
Battery discharged

Controller keys are designated as »**Key Name**«, e.g.
»**man.**«

General WARNINGS and CAUTIONS

WARNING !

Strictly follow this Operator's Instruction Manual

Any use of the product requires full understanding and strict observation of all portions of these instructions. The equipment is only to be used for the purpose specified under "Intended Use" (see page 12). Observe all WARNINGS and CAUTIONS as rendered throughout this manual and on labels on the equipment.

WARNING !

This device is to be used only in rooms with line power installations complying with national safety standards for hospital patient rooms. (e.g., IEC 601.1, "Safety of Medical Equipment).

To maintain grounding integrity, connect only to a "hospital grade" receptacle. Always disconnect supply before servicing.

WARNING !

DANGER, risk of explosion if used in the presence of flammable anesthetics.

This device is neither approved nor certified for use in areas where combustible or explosive gas mixtures are likely.

WARNING !

Do not use cellular phones within 33 feet (10 m) of the equipment.

Wireless phones may cause malfunction in electromedical equipment.

WARNING !

Skin temperature control must not be used with babies in shock. Because of reduced peripheral blood flow the skin temperature of these babies occasionally lies well below the core body temperature. Using a skin temperature control system could lead to overheating. We recommend to set heater output manually when caring for patients with such conditions.

WARNING !

Do not use skin temperature control for infants with a high temperature. Their skin temperature is significantly higher than normal so that controlling skin temperature would lead to hypothermia. We recommend to set heater output manually when caring for patients with such conditions.

CAUTION !

Restriction of Distribution

Federal Law and Regulations in the United States and Canada restrict this device to sale by or on the order of a physician.

Device for use only in health care facilities and only used by persons with specific training and experience in the use of the device.

CAUTION !

Maintenance

In case of malfunction of this device, contact your local DrägerService or our Factory Authorized Technical Service Center.

The device must be inspected and serviced (preventive maintenance) by competent and factory authorized technical service representatives at regular 2 year intervals. A record must be kept on this preventive maintenance. We recommend obtaining a service contract through your vendor.

Maintenance or repair of the Babytherm 8004/8010 shall be performed only by Dräger authorized technical service representatives.

Precautions During Preparation

WARNING !

Always select correct mattress type for intended mode of operation (see page 20).

WARNING !

To maintain grounding integrity, connect only to a "hospital grade" receptacle.

CAUTION !

Always verify that monitor shelves and other accessories are securely attached.

Always observe the following load limits per shelf: not to exceed **20 kg (44 lbs)**. total load on both columns: max. **30 kg (66 lbs)**.

For items attached to column on swivel shelves, do not exceed load of **5 kg** on that column.

CAUTION !

Do not place any objects above or underneath bassinet where they might be damaged when height adjustments are made.

CAUTION !

Never route patient circuits or lines over top of panels – they may get pinched when folding up panels or when installing cover.

CAUTION !

Always use circuits and patient lines with sufficient length for secure connection at minimum and maximum height.

CAUTION !

Always observe the load limit of 50 kg on the electric height adjustment.

Precautions During Operation

WARNING !

Never leave patient unattended when surrounding panels are down. Risk of patient injury by infant falling out of the bassinet.

WARNING !

For lively and greater babies use side panels of 23 cm height and additional inner panels. Supervise the baby corresponding to its liveliness.

WARNING !

When folding up surrounding panels, take care not to pinch patient body parts, circuits, or other items, such as sheets.

WARNING !

Continuous or intermittent audible alarms require immediate operator attention to avert or to prevent development of situations with the possibility of patient injury.

WARNING !

All accessories used must comply with national safety standards for electromedical equipment used in patient rooms (e.g. IEC 601.1).

WARNING !

Patient Temperature Monitoring

Check the baby´s core temperature and skin condition at regular intervals and adjust temperature setting to individual patient needs.

Core temperature of the baby must be monitored particularly carefully during phototherapy or while the radiant heater is used in conjunction with mattress heater.

Skin temperature monitoring is no substitute for core temperature checks since the two parameters do not always closely correlate.

WARNING !

Mattress Heater (Babytherm 8010 only)

When mattress heating is used, the gel mattress must be placed directly on the heated tray surface.

The Dräger gel mattress (part no. 2M 20 827) must not be used in any bassinets other than the Babytherm. Heater plate temperatures above 40 °C (104 °F) implicate the danger of patient burns! Use of a gel mattress with unheated bassinets will result in uncontrolled patient cooling.

Always take into account warm-up time of the mattress (approximately 1 hour) before placing a patient in the bassinet.

Do not switch off Babytherm while a baby is lying on the gel mattress as this will result in uncontrolled cooling of patient .

WARNING !

Do not touch top of radiant heater or protective screen.

Danger of burn injuries!

WARNING !

Do not use flammable detergents, or medications while radiant heater is in operation.

Fire hazard!

WARNING !

Never leave baby unattended while radiant warmer is in operation!

Measure core temperature at regular intervals!

WARNING !

Do not put any medications or infusion solutions in the heated area.

WARNING !

Skin temperature control must not be used with babies in thermic shock. Because of reduced peripheral blood flow the skin temperature of these babies occasionally lies well below the core body temperature. Using a skin temperature control system could lead to overheating. We recommend to set heater output manually when caring for patients with such conditions (see page 28).

WARNING !

Do not use skin temperature control for infants with a high temperature. Their skin temperature is significantly higher than normal so that controlling skin temperature would lead to hypothermia. We recommend to set heater output manually when caring for patients with such conditions (see page 28).

WARNING !

Always operate phototherapy lights in combination with radiant heater. Otherwise risk of hypothermia for the undressed infant.

Core temperature of the baby must be monitored particularly carefully during phototherapy because of the additional transfer of thermal energy to the patient.

WARNING !

Fire Hazards from oxygen !

- No open flames or cigarettes ! Textiles, plastics, and oils readily ignite in an oxygen enriched atmosphere and burn with great intensity.
- Keep oxygen valves, connections, and seals free from oil and grease.
- Open valves slowly
- Do not operate Babytherm in the presence of flammable anesthetics or disinfectants
- Do not use or store flammable liquids such as alcohol, ether, or acetone inside the Babytherm bassinet.
- Do not use electrical equipment inside hood with the exception of devices approved for use in explosive environments.

WARNING !

Physiological risks of oxygen !

- **Oxygen therapy only on the order of a physician**
- **Elevated oxygen concentrations must be selected on the basis of arterially measured oxygen partial pressure in the patient's blood. Otherwise risk of hyperoxemia (eye injuries with consequential blindness) or hypoxemia (brain injuries).**
- **Monitor oxygen concentration at all times during oxygen therapy.**

WARNING !

Always verify that sensor probe is specified and approved for use with Dräger Babytherm Radiant Warmer 8004/8010.

WARNING !

The sensor probe must never be placed under the baby. It would be measuring and attempting to control core temperature rather than skin temperature.

WARNING !

Never use skin temperature probes for rectally measuring core temperature !

Specifically, never use skin temperature probe rectally for skin temperature control as this would measure and use core instead of skin temperature for control.

WARNING !

When using skin temperature control mode, check infant skin condition at regular intervals and verify that skin temperature probe is securely attached. A detached probe will measure air temperature and the baby might become overheated.

WARNING !

Always warm up mattress before placing patient.

Do not switch off Babytherm while a baby is lying on the gel mattress as this will result in uncontrolled cooling of patient.

WARNING !

Use temperature settings in the lower extended temperature range only on the order of a physician. Watch patient particularly carefully!

WARNING !

Always use patient eye protection when using phototherapy.

WARNING !

Always consider differentiated diagnosis for patient so life sustaining measures are not delayed.

WARNING !

Check the baby´s core temperature at regular intervals. Phototherapy increases heat transfer to patient.

Measure patient's bilirubin level at regular intervals

CAUTION !

Remove from mattress all objects with sharp edges. The gel mattress could be damaged!

Do not fold gel mattress!

CAUTION !

Do not place any objects above or underneath bassinet where they might be damaged when height adjustments are made.

Precautions During Care

WARNING !

Always follow accepted hospital procedures for handling equipment contaminated with body fluids.

WARNING !

Always disconnect power supply before cleaning and disinfecting.

CAUTION !

Do not fold gel mattress!

CAUTION !

Certain components of the bassinet consist of materials that are sensitive to certain organic solvents sometimes used for cleaning and disinfecting (e.g., alcohols, phenols, halogen releasing compounds, oxygen releasing compounds, strong organic acids, etc.). Exposure to such substances may cause damage that is not always immediately recognized. Sterilization of the bassinet itself with ethylene oxide (EtO) is also not recommended.

CAUTION !

Do not expose Babytherm 8004/8010 to high levels of ultraviolet radiation. This may cause cracks in the PMMA (acrylic glass) parts.

CAUTION !

Do not launder mattresses in an automatic washing machine. Do not autoclave mattresses.

CAUTION !

Only use detergents/disinfectants with a ph value of 7 to 9 for phototherapy lenses.

Precautions During Maintenance

WARNING !

To avoid any risk of infection, clean and disinfect bassinet and accessories before any maintenance according to established hospital procedures – this applies also when returning units or parts for repair.

WARNING !

Maintenance work on the Babytherm 8004/ 8010 may be performed by trained and factory authorized staff only.

WARNING !

Always disconnect power supply before servicing.

WARNING !

Never operate the infant warmer system if it has suffered physical damage or does not seem to operate properly. In this case, always refer servicing to properly trained and factory authorized service personnel.

Intended Use

Babytherm 8004/8010 is an infant warmer system intended as a therapeutic device providing warmth for premature and full-term neonates and infants with a weight up to16 lbs. It is intended for use in delivery rooms, operating theatres, maternity and obstetric units, neonatal wards, neonatal and paediatric intensive care units. Both systems can be equipped with the optional phototherapy system for treatment of hyperbilirubinemia.

WARNING !

This device is to be used only in rooms with line power installations complying with national safety standards for hospital patient rooms. (e.g., IEC 601.1, "Safety of Medical Equipment).

To maintain grounding integrity, connect only to a "hospital grade" receptacle. Always disconnect supply before servicing.

WARNING !

DANGER, risk of explosion if used in the presence of flammable anesthetics.

This device is neither approved nor certified for use in areas where combustible or explosive gas mixtures are likely.

CAUTION !

Restriction of Distribution

Federal Law and Regulations in the United States and Canada restrict this device to sale by or on the order of a physician.

Device for use only in health care facilities and only used by persons with specific training and experience in the use of the device.

Babytherm 8004 warms with a radiant heater providing both "manual control" and "skin temperature control" modes.
Babytherm 8010 warms with a radiant heater providing both "manual control" and "skin temperature control" modes as well as with a heated gel mattress.

Therapy and nursing uses:

- Resuscitation table
- Bassinet for use in normal and intensive care
- Patient re-warming and prevention of heat loss
- Thermal stabilizing of a patient with mattress heater (Babytherm 8010, only)
- Gentle warming therapy using the combination of radiant and mattress heater (Babytherm 8010, only)
- Cooling patients with high temperatures (mattress temperature below body temperature; Babytherm 8010, only)
- ThermoMonitoring by tummy-toe temperature measurement for improved feedback of the thermal condition of a patient
- Trendelenburg and reverse Trendelenburg positioning
- Weaning of incubator patients to standard (unheated) bassinet
- Oxygen and aerosol inhalation therapy with appropriate accessories
- Phototherapy for lowering of patient blood bilirubin levels (with phototherapy option)
- X-Ray assistance

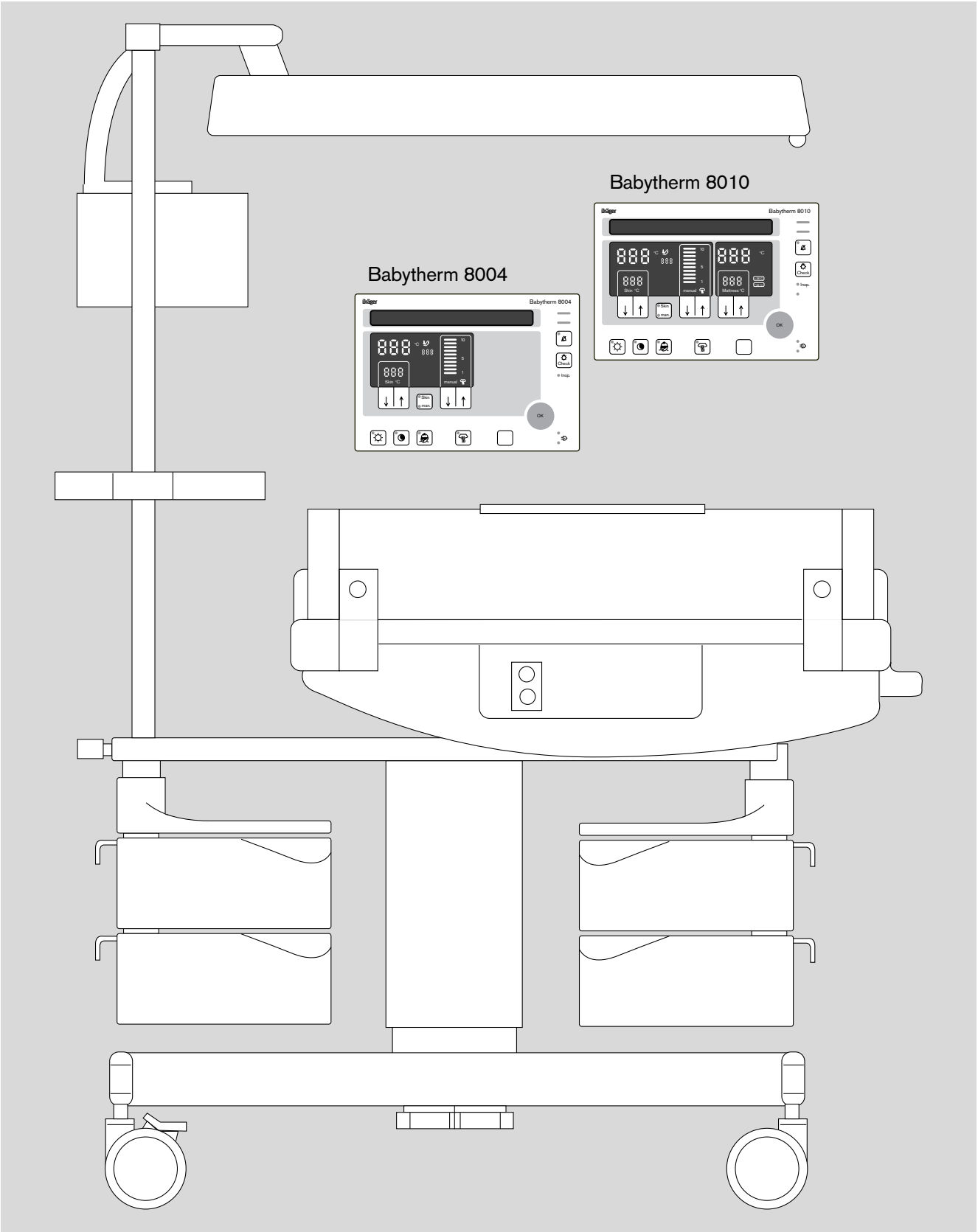
Options

- Power column for electric height adjustment
- One or two (with power column installed) swivel cabinets
- Double (inner) walls
- IV-pole
- Phototherapy
- Hood
- Swivel tray

Optional accessories

- Bronchial suction equipment
- O_2-management accessories (flowmeter, headhood, monitor)
- Interface for data output

Overview



Description of System Components

Babytherm consists of
– a mobile chassis with the attached infant bed
– a controller unit with operating panel
– a radiant heater, and
– a mattress heating system (Babytherm 8010 only)

Controller unit

The controller unit is located below the radiant warmer between the two support columns at the head end of the bed. The panel contains a membrane keypad and display area. Integrated into the alphanumeric display (2 x 40 characters) is a user guide for easier operation.

Radiant heater

The radiant warmer combines two infrared ceramic heaters and 2 lights for illuminating the bed surface. An integrated phototherapy light is optional.
The work light provides two settings, for daytime and for nighttime lighting. The well balanced color spectrum of the lamps used makes it easier to recognize diagnostically significant skin color nuances.

The radiant warmer can be operated in manual control mode or skin temperature control mode.
"Manual" control mode provides fixed heater output level settings from 1 through 10.
"Skin control" controls skin temperature according to a preset value. Heater output is then automatically controlled to patient needs.

Both modes of operation are monitored with check routines and alarm schemes.

ThermoMonitoring™

ThermoMonitoring is made possible with a secondary skin temperature sensor. Skin temperatures taken close to the body core and at the periphery (tummy-toe temperature monitoring) are displayed on the controller unit. They can be graphically represented on a PC via optional serial interface (RS 232), using Dräger's ThermoView™ software, improving diagnostic possibilities.

Mattress heating

The Babytherm 8004/8010 features a mattress heating system that uses conductive heat transfer to warm up patients and to keep them warm.The system consists of a gel mattress, an aluminum heating plate and an electronic control and monitoring unit.

The gel mattress is made of a gel material with excellent heat conducting properties, which won't dislocate even when the bed is tilted. The gel is enclosed by a soft, skin compatible film.

The mattress molds itself to the body contours of the patient lying on it, resulting in a large contact surface, a property facilitating heat conduction to the patient and avoiding pressure points (anti-decubitus effect). A cold gel mattress, on the other hand, dissipates a patient's thermal energy. The gel material has an excellent capacity for storing heat. When the power supply is disconnected (e.g. during a transport within the hospital), the patient is kept warm for approximately 15 minutes if sufficiently insulated (blanket, cover).

The aluminum heating plate consists of a 6 mm (1/4 inch) thick aluminum plate and a heater element attached below. It distributes heat evenly over the entire bed area.

The mattress heater membrane keypad with its buttons and display is located on the right-hand side of the controller unit.

Mattress temperature is controlled according to the set value entered. It adjusts in such a way that the set temperature is reached (but not exceeded) in those areas where the patient is in contact with the mattress. System monitoring includes check routines and alarm features.

Configuration mode

Configuration mode is a special operational mode of the Babytherm 8004/8010 controller. In this mode, information regarding software version and error log cna be polled. The device can also be programmed with user specific settings of skin temperature alarm threshold, volume of audible alarms, as well as language and contrast of the alphanumeric display. It also serves to test the built-in nurse call and keys of the operating panel.

Phototherapy (available option)

Light from the halogen lamps contributes to photochemical breakdown of bilirubin in the skin.
Dräger halogen lights emit very effectively at wavelengths around 460 nm without the blue light often associated with phototherapy. They therefore provide for good skin color representation.

Phototherapy is switched on the main controller panel.

Modes of heater operation Babytherm 8004

– Operation of radiant heater with preset heater output: Heater output is controlled in "manual" mode and therapy is time-limited for higher heater output settings.
– Operation of radiant heater in "skin control" mode: Skin temperature is monitored and controlled.

Modes of heater operation Babytherm 8010

– Operation of radiant heater with preset heater output: Heater output is controlled in "manual" mode and therapy time-limited for higher heater output settings.
– Operation of radiant heater in "skin control" mode: Skin temperature is monitored and controlled.
– Mattress heater, independent of radiant heater: Temperature of heating surface monitored and controlled to maintain a preset temperature in the contact area between infant and mattress.

Alarm System

The Babytherm controller distinguishes three levels of alarms.

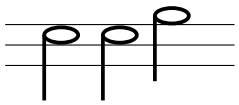
High potential for patient risk

a continuous audible alarm (enunciator) that cannot be silenced, for:
– device malfunction,
– power failure

an alarm tone sequence (loudspeaker) that can be silenced in combination with flashing red LED, for:
– mattress heater sensor failure,
– mattress heater exceeding temperature limits,
– skin temperature sensor not connected during skin control,
– sensor failure of tummy or toe skin temperature sensor.

Medium potential for patient risk

an alarm tone sequence (can be silenced) in combination with flashing yellow LED, for:
– deviation between set and measured value for skin or mattress temperature exceeding tolerance,
– 15-minute alarm (as a reminder to check core temperature during manual mode with heater levels higher than 3).



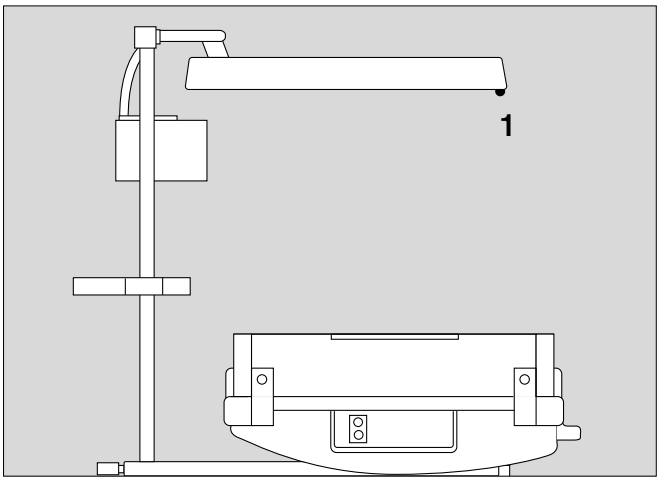
Low potential for patient risk

Display messages for:
– measured values out of measuring range,
– low battery voltage.

Any alarm that has not been acknowledged is indicated by flashing red central alarm light on the radiant heater unit.

The display shows a specific message for the alarm activated.

NOTE: A new alarm being activated will always override audible alarm silencing.

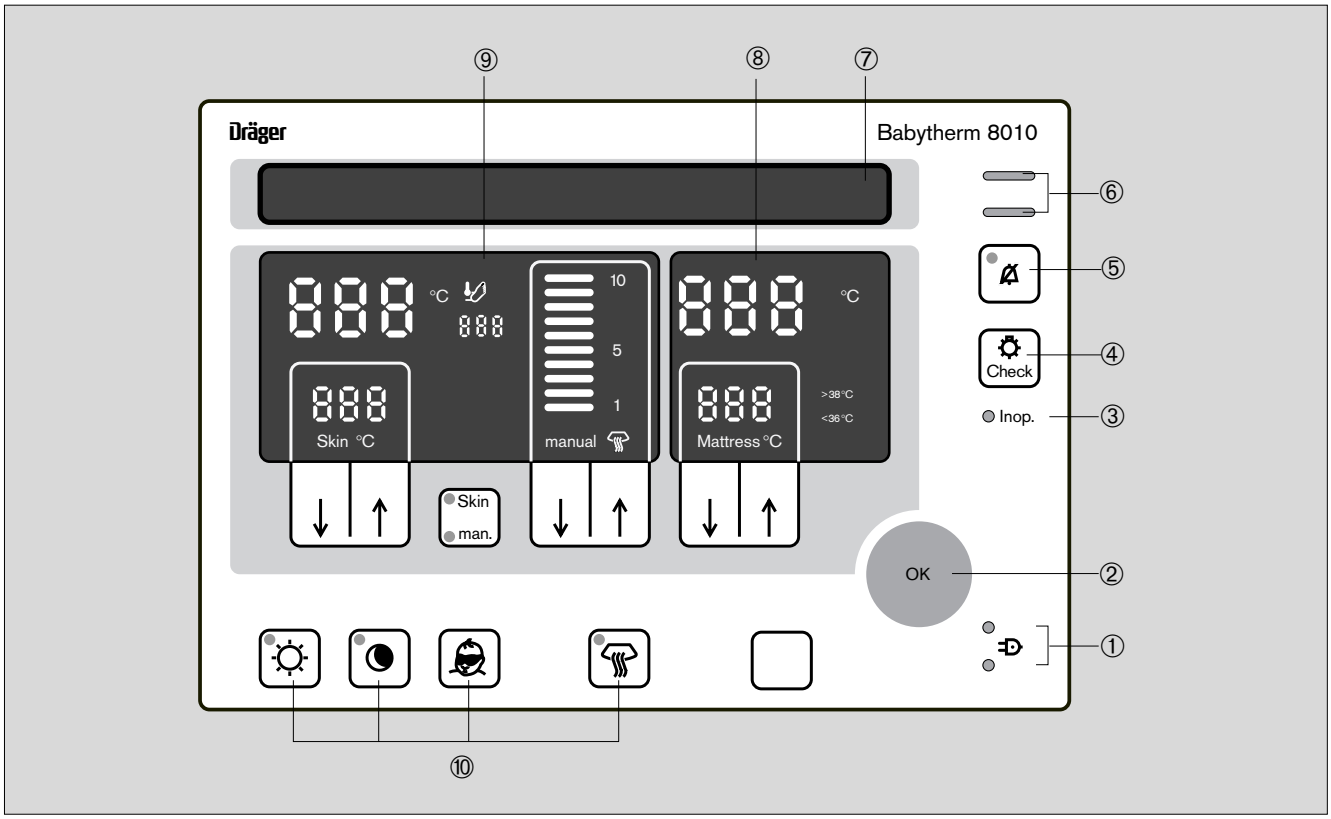


Central Alarm

1 Red light on radiant heater starts flashing simultaneously with any audible alarms.

Acknowledging the alarm will switch light off.

Operating Concept



① Status LEDs
Green LED continuously on during operation.
Red LED continuously on during power outages.

② **»OK«** key for confirming settings and to acknowledge alarms.
NOTE: If the **»OK«** key is not pressed within 10 seconds after changing a setting, the previous settings will remain in effect!

③ Red indicator LED for "Inop." alarm.

④ Key for testing LEDs, displays, enunciator, and audible alarm.

⑤ Key for silencing audible alarms.

⑥ Visual display of alarms:
Warning = red LED, Caution = yellow LED.

⑦ Text display, shows user messages and alerts.

⑧ Babytherm 8010 only – display and keypad for operating mattress heater:
top: display of measured mattress temperature;
bottom: display of set value for mattress temperature with keys for setting;
to the right: indicator for operation in extended range high (>38 °C), low (<36 °C).

⑨ Display and keypad for radiant heater:
top: display for measured values of skin temperatures close to core (tummy) and at periphery (toe);
bottom: Set value for skin temperature using keys for changing set value and key for switching between manual and skin temperature control mode. The currently active mode is indicated by the respective yellow LED;
Further to the right: bar graph for displaying heater levels 1 through 10 for manual mode operation
Heater levels 1 to 3 = green bar elements,
Heater levels 4 to 10 = yellow bar elements,
and below, keys for setting heater levels.

⑩ On/Off keys for switching:
work light,
night light,
phototherapy (available option)
radiant heater.
The respective yellow LEDs are lit during operation.

Preparation

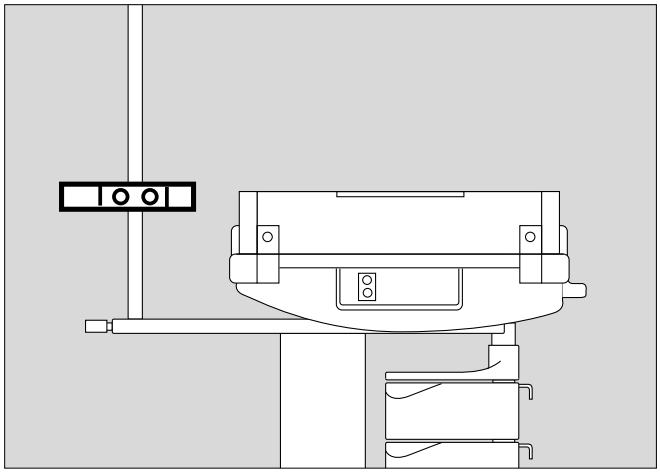
Preparing Column Accessories

Monitor shelf

Babytherm comes equipped with one monitor shelf.

Mounting rail elements (available option) to monitor shelf:

- Attach rail element to left and/or right of monitor shelf with screws provided.



CAUTION !

Always verify that monitor shelves and other accessories are securely attached.

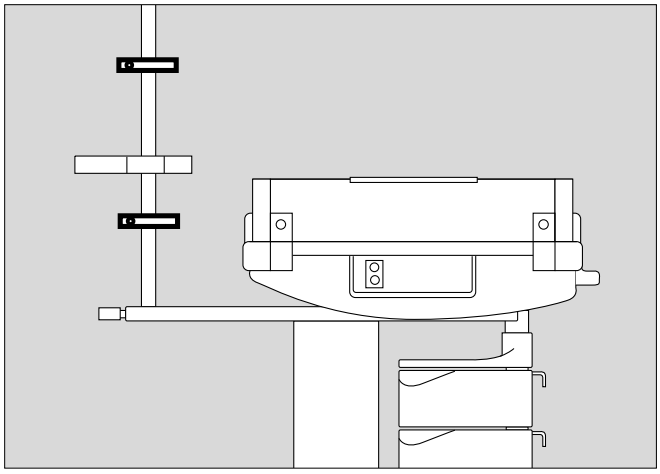
Always observe the following load limits per shelf: not to exceed **20 kg (44 lbs)**.
total load on both columns: max. **30 kg (66 lbs)**.

For items attached to column on swivel shelves, do not exceed load of **5 kg** on that column.

Compact rail

For placing smaller accessories, e.g. O_2 flowmeter, O_2 monitor.

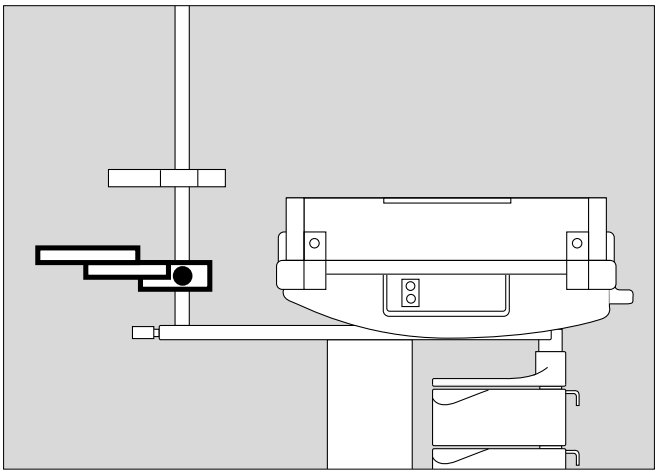
- Attach compact rail element to one of the columns at a convenient height.



Instrument tray

For small instruments, maximum load capacity 3 kg (6.5 lbs).

- Put clamp of instrument tray on one of the columns and tighten hand screw.
  Recommended height: mattress level.
- Keep area clear for swiveling tray.

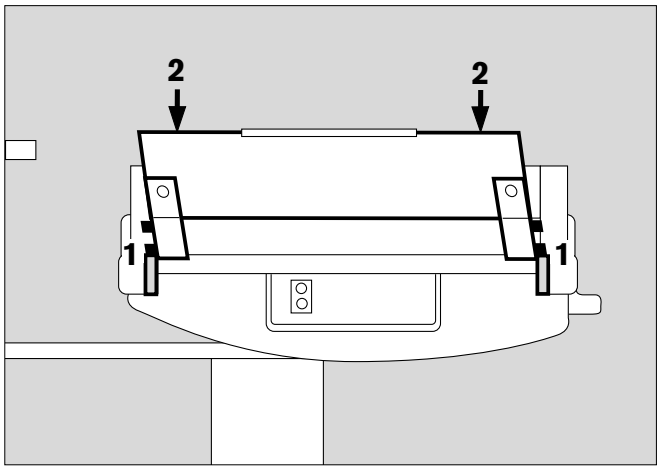


See above CAUTION for load limits to maintain a safe level of stability against tipping over pursuant IEC standards.

Preparing the Bed

The bed is surrounded by two side panels and two end panels, which can be opened independently of each other. End panels have cutouts with U-grommets for routing circuits and patient cables.

Installing surrounding panels



1 Insert lower pins on panel hinges into the left- and right-hand slots in bassinet base.

- Position panel semi-upright.

2 Press panel down firmly, until pins lock into position at the bottom of slots.

- Tilt panel fully upright and let it slide into locking position.

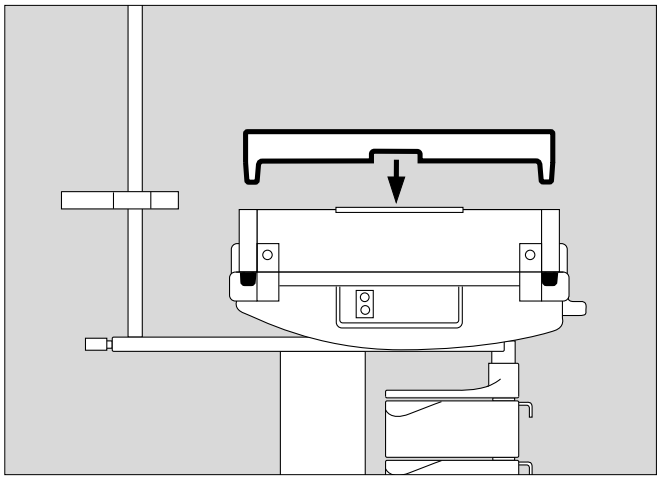
- Install all four panels in the same fashion.

Verify that the panels are seated correctly!

To open:

- Lift panel all the way up, until upper pins on hinge brackets are out of their guide slots, then fold down.

Installing inside panels



Use inside panels to protect the baby from falling out when side panels are open.

- Insert pins in tapered holes and press down slightly until the inside panel is firmly seated.
- Repeat for second inner panel.

WARNING !

For lively and greater babies use side panels of 23 cm height and additional inner panels. Supervise the baby corresponding to its liveliness.

Fitting a mattress

- Select mattress type:

– Operation **with** mattress heating (Babytherm 8010 only):
  Gel mattress 2M 20 827.
– Operation **without** mattress heating (Babytherm 8004):
  Foam rubber mattress 2M 21 012.

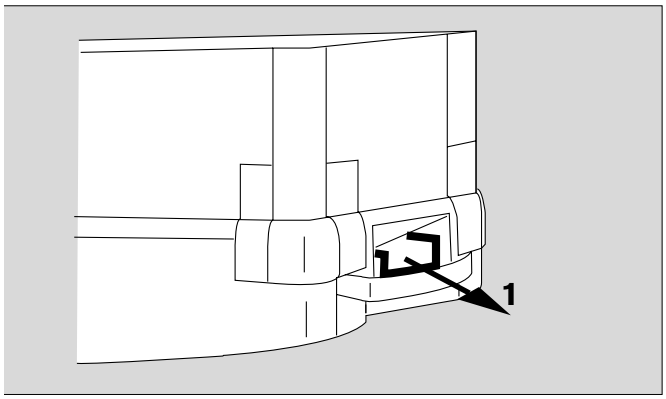
WARNING !
Always select correct mattress type for intended mode of operation.

- Place the mattress in bassinet and cover it with a thin sheet.

NOTE: Do not obstruct conductive heat transfer by blankets or other insulating covers placed underneath the patient.

Tilting the bed

1 Pull handle of locking mechanism toward front.

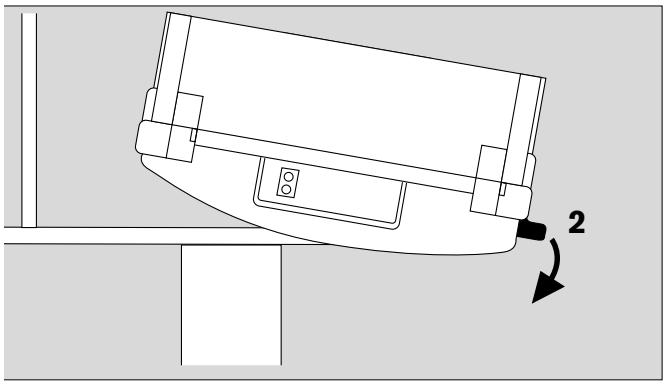


2 Push handle down = head-up position.
Pull handle up = head-down position.

- Release locking handle, the bed locks into position.

The bed can be tilted in increments of 0.5°.

Maximum tilt angles:
Trendelenburg position: 20°
Reverse Trendelenburg position: 15°



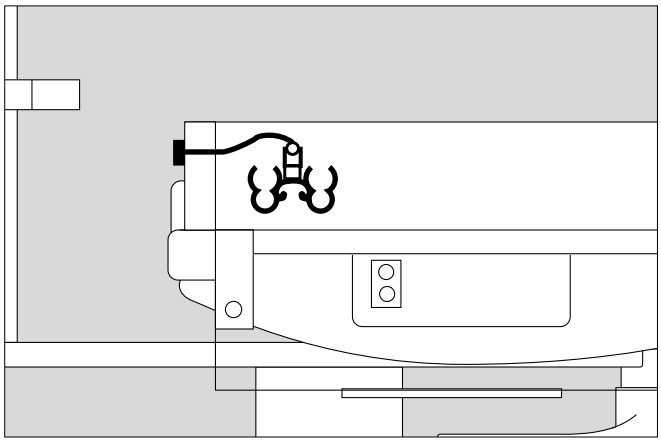
Preferred positions:
horizontal position,
10° Trendelenburg (head up) and
10° reverse Trendelenburg position (head down).

At max. tilt angle the mattress can slip from its position:

- In this case don't place sheet underneath the mattress.

Attaching Ventilator Circuit Support Arm

- Insert flexible support arm into hole in the left side of head panel and tighten with knurled screw.



Supplies Storage Options

Units with height adjustable column:
– swivel cabinet (available option) with 2 compartments and 1 swivel tray

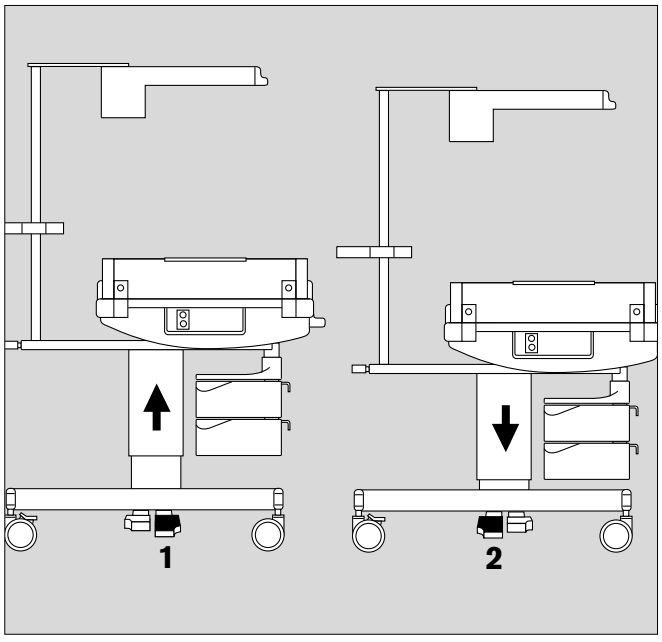
Units without electric height adjustment:
– 2 open compartments in the column (standard),
or
– 1 swivel cabinet with 2 compartments and 1 swivel tray (available option).

Adjusting the Height (Option)

1 Briefly depress right pedal.
The bassinet is raised.

2 Briefly depress left pedal.
The bassinet is lowered.

- Adjust to comfortable working height.



CAUTION !

Do not place any objects above or underneath bassinet where they might be damaged when height adjustments are made.

CAUTION !

Always use circuits and patient lines with sufficient length for secure connection at minimum and maximum height.

CAUTION !

Always observe the load limit of 50 kg on the electric height adjustment.

Preparing for Intra-Hospital Patient Transport

- If height adjustment option is installed, lower bed to lowest possible position.
- Swivel all cabinet trays inward.
- Swivel instrument tray inward.
- Detach or relocate any accessories protruding sideways from the unit.
- Turn off heating systems and disconnect unit from power.

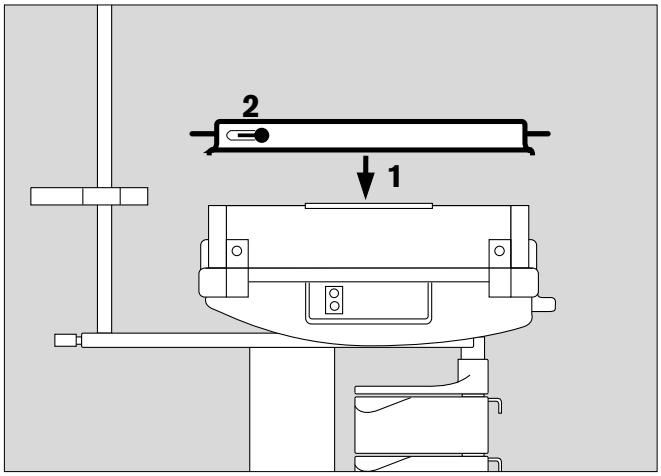
For intra-hospital transport of a patient with Babytherm 8004/8010:

Install cover (available accessory) to protect patients from cold drafts:

1 Position cover on the end panels.
Side panels can still be opened when cover is installed, end panels **cannot** be opened.

2 Verify inside temperature with thermometer mounted inside the cover.

NOTE: When using cover, use 230 mm high side panels.



Testing Readiness for Operation

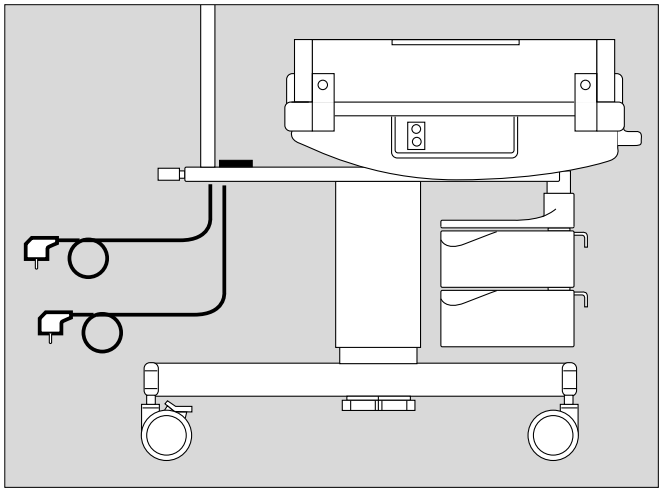
Before First Use

- Verify that supplied voltage matches values indicated on the rating plate next to the power cables.

WARNING !

To maintain grounding integrity, connect only to a "hospital grade" receptacle.

- Connect both power plugs to power supply.



Before Each Use

- Has the unit been disinfected?
- Are the surrounding panels locked securely into place, and do they stay closed? Panel hardware is visible above the bed surface.
- Are all panels free of cracks and sharp edges?
- Is the correct mattress in the bassinet?

  Operation with mattress heater ➡ gel mattress,
  operation without mattress heater ➡ foam rubber mattress.

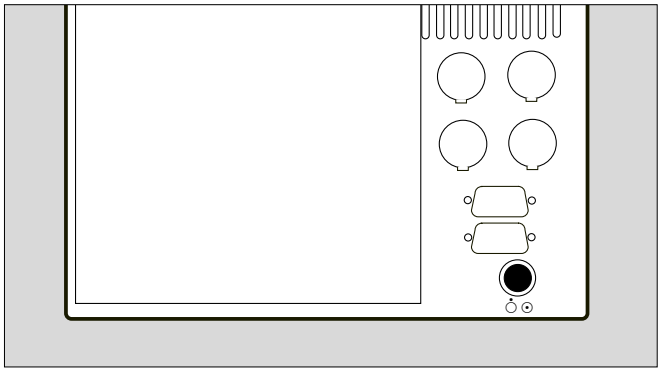
- Does the bed tilt properly and lock securely into position?
- Does the electric height adjustment work properly?
- Is the thermometer in the cover (available option)?
- Are accessories and therapy equipment available and in proper working order?
- Is gas supply available and sufficient for accessories to be used?
- Are all circuits and patient lines installed securely and properly?

CAUTION !

Never route patient circuits or lines over top of panels – they may get pinched when folding up panels or when installing cover.

Switching on and activating self test

- Press On/Off button, until it engages = ON.
  Running a self test, Babytherm will now check important functions.



1 The green »Power On«-LED is lit.

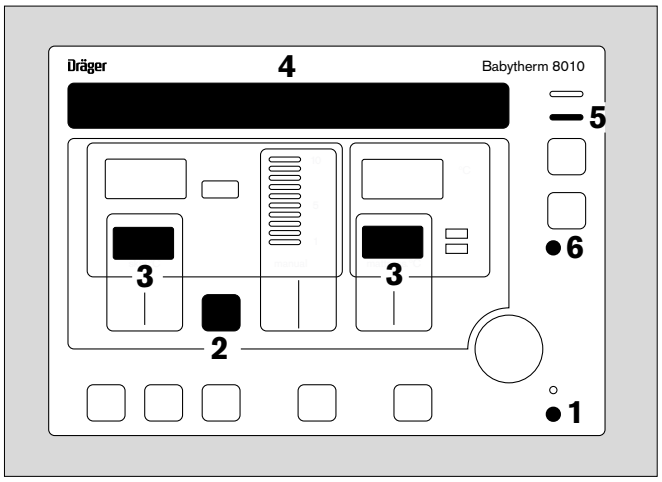
2 After approximately 2 seconds, Babytherm displays the radiant heater mode:
»man.« – no skin temperature probe connected
or
»Skin« – at least the yellow ("tummy") skin temperature probe is connected.
The respective LED is blinking.

3 The preconfigured set values are displayed.

4 If text message **Battery discharged** is showing and

5 yellow LED is lit, the rechargeable battery for power failure alarm is being recharged. After approximately 30 minutes, the battery will be sufficiently recharged.

5 The yellow LED will be off.



6 If the red **»Inop.«** LED is lit **= device malfunction**, see "Troubleshooting", page 53.

Testing LEDs, displays and audible alarm

7 Press Check key.

8 Display shows message:
All displays on, horn on

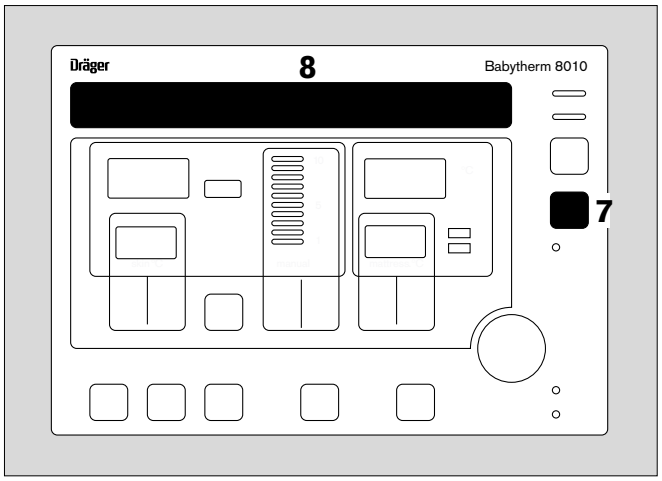
All display elements remain on for about 2 seconds, all LEDs are lit; the digital displays show **88.8** simultaneously with a continuous audible alarm from the enunciator.

8 Display shows message:
All displays off, soft alarm on

All display elements remain dark for about 2 seconds, simultaneously with an intermittent audible alarm.

This functional test may be performed also during operation.

- Check at least once a day.

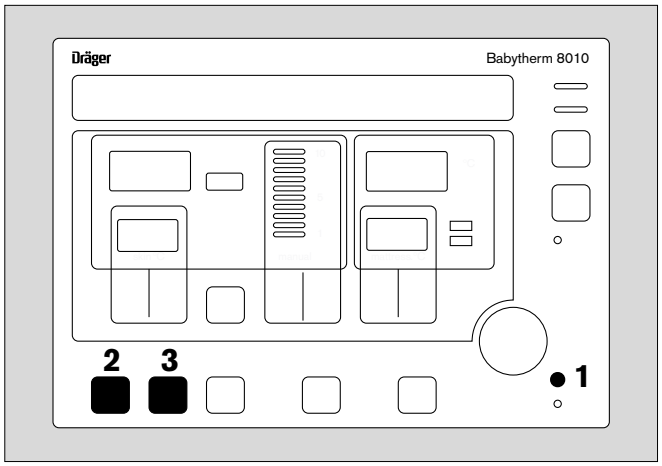


Testing power failure alarm

- Disconnect power plug.

1 Red LED ⇉ will light simultaneously with continuous audible alarm.

- Reconnect power.
  Babytherm will continue to operate with values set **before** power failure.



Testing lights

2 Press key, bed surface is now lit by work light.

2 Press key again, work light will go off.

3 Press key, bed surface is now lit by night light.

3 Press key again, night light will go off.

Operation

Precautions During Patient Care

WARNING !

Never leave patient unattended when surrounding panels are down. Risk of patient injury by infant falling out of the bassinet.

WARNING !

When folding up surrounding panels, take care not to pinch patient body parts, circuits, or other items, such as sheets.

WARNING !

Continuous or intermittent audible alarms require immediate operator attention to avert or to prevent development of situations with the possibility of patient injury.

WARNING !

All accessories used must comply with national safety standards for electromedical equipment used in patient rooms (e.g. IEC 601.1).

Warmer Therapy

WARNING !

Patient Temperature Monitoring

Check the baby´s core temperature and skin condition at regular intervals and adjust temperature setting to individual patient needs.

Core temperature of the baby must be monitored particularly carefully during phototherapy or while the radiant heater is used in conjunction with mattress heater.

Skin temperature monitoring is no substitute for core temperature checks since the two parameters do not always closely correlate.

Always consider effects of additional sources of heat, such as phototherapy lamps or radiant heaters. They increase the heat directed to the patient. Avoid direct sunlight!

Mattress heater

WARNING !

Mattress Heater (Babytherm 8010 only)

When mattress heating is used, the gel mattress must be placed directly on the heated tray surface.

The Dräger gel mattress (part no. 2M 20 827) must not be used in any bassinets other than the Babytherm. Heater plate temperatures above 40 °C (104 °F) implicate the danger of patient burns! Use of a gel mattress with unheated bassinets will result in uncontrolled patient cooling.

Always take into account warm-up time of the mattress (approximately 1 hour) before placing a patient in the bassinet.

Do not switch off Babytherm while a baby is lying on the gel mattress as this will result in uncontrolled cooling of patient .

Radiant heater

WARNING !

Do not touch top of radiant heater or protective screen.

Danger of burn injuries!

WARNING !

Do not use flammable detergents or medications while radiant heater is in operation.

Fire hazard!

WARNING !

Never leave baby unattended while radiant warmer is in operation!

WARNING !

Do not put any medications or infusion solutions in the heated area.

Radiant heater

WARNING !

Skin temperature control must not be used with babies in thermic shock. Because of reduced peripheral blood flow the skin temperature of these babies occasionally lies well below the core body temperature. Using a skin temperature control system could lead to overheating. We recommend to set heater output manually when caring for patients with such conditions.

WARNING !

Do not use skin temperature control for infants with a high temperature. Their skin temperature is significantly higher than normal so that controlling skin temperature would lead to hypothermia. We recommend to set heater output manually when caring for patients with such conditions.

Phototherapy (available option)

WARNING !

Always operate phototherapy lights in combination with radiant heater. Otherwise risk of hypothermia for the undressed infant.

Core temperature of the baby must be monitored particularly carefully during phototherapy because of the additional transfer of thermal energy to the patient.

Oxygen therapy (with optional accessories)

WARNING !

Fire Hazards from oxygen !

- **No open flames or cigarettes ! Textiles, plastics, and oils readily ignite in an oxygen enriched atmosphere and burn with great intensity.**
- **Keep oxygen valves, connections, and seals free from oil and grease.**
- **Open valves slowly**
- **Do not operate Babytherm in the presence of flammable anesthetics or diinfectants**
- **Do not use or store flammable liquids such as alcohol, ether, or acetone inside the Babytherm bassinet.**
- **Do not use electrical equipment inside hood with the exception of devices approved for use in explosive environments.**

WARNING !

Physiological risks of oxygen !

- **Oxygen therapy only on the order of a physician**
- **Elevated oxygen concentrations must be selected on the basis of arterially measured oxygen partial pressure in the patient's blood. Otherwise risk of hyperoxemia (eye injuries with consequential blindness) or hypoxemia (brain injuries).**
- **Monitor oxygen concentration at all times during oxygen therapy.**

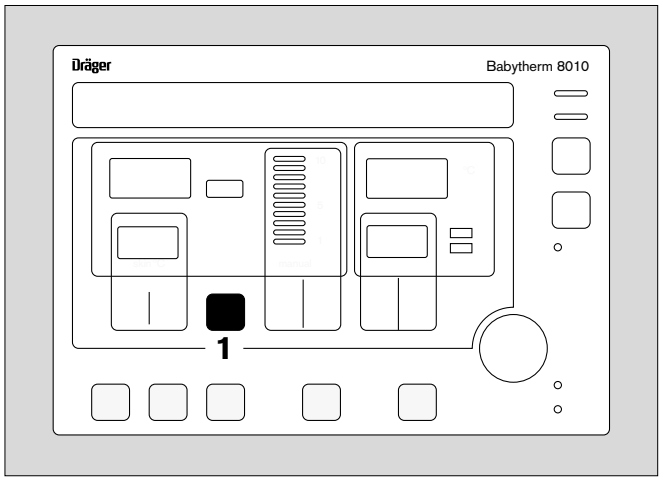
Using the Radiant Heater

After switching Babytherm on, it will suggest a mode of operation for the radiant heater:

– no skin temperature probe connected = **»man.«** (manual mode)

– at least the yellow "tummy" skin temperature probe is connected = **»Skin«** (skin temperature control mode).

1 The respective yellow LED in the key is blinking.



Setting Heater Output Manually

For instance during short-term treatment, for infants in thermic shock who should not be treated using skin temperature control.
In manual mode, the radiant warmer provides preset heater output, not linked to the body temperature of the infant.
Output can be manually set between levels 1 and 10, with setting 10 providing the maximum power output.
For more details see "Technical Data", page 61.

WARNING !

Never leave baby unattended while radiant warmer is in operation!

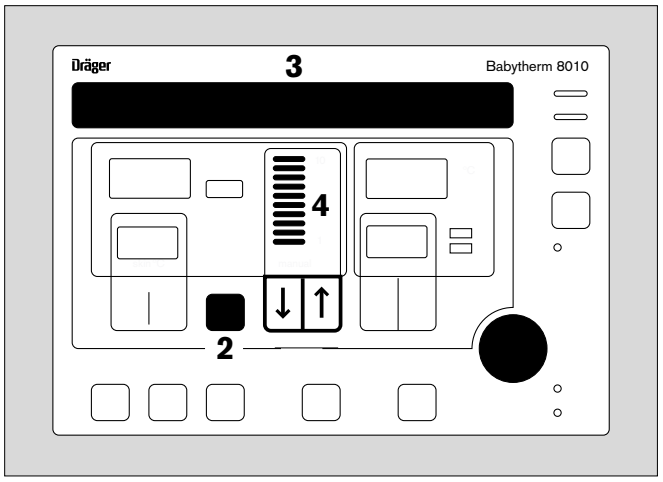
Measure core temperature at regular intervals!

To enter manual mode when "Skin" mode is still on:

2 Press key, the yellow LED **»man.«** starts blinking.

3 The display shows message:
Set radiant heater level
Press OK-button to cancel.

4 Babytherm will offer the current calculated heater output setting as default.
(After switching on, default heater level is 3.)
Each LED segment reflects a heater level increment:
1 through 3 = green LEDs
4 through 10 = yellow LEDs.



1 Press **»OK«** key = confirm heater output at suggested level.

Or

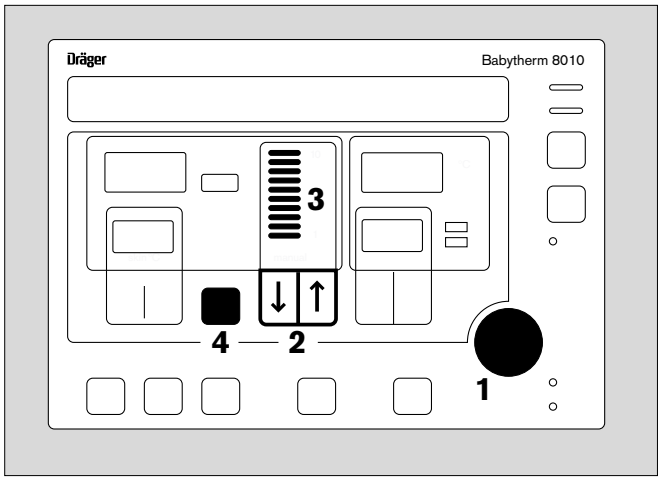
2 press ↓ or ↑ key to select heater output level.

1 Press **»OK«** key = confirm heater output.

NOTE: If **»OK«** key is not pressed within approximately 10 seconds, the message will disappear and the previous setting will remain in effect.

3 Display of newly selected heater output level.

4 Yellow LED in the key is now continuously lit, " manual" mode is now active.



WARNING !

Measure core temperature at regular intervals!

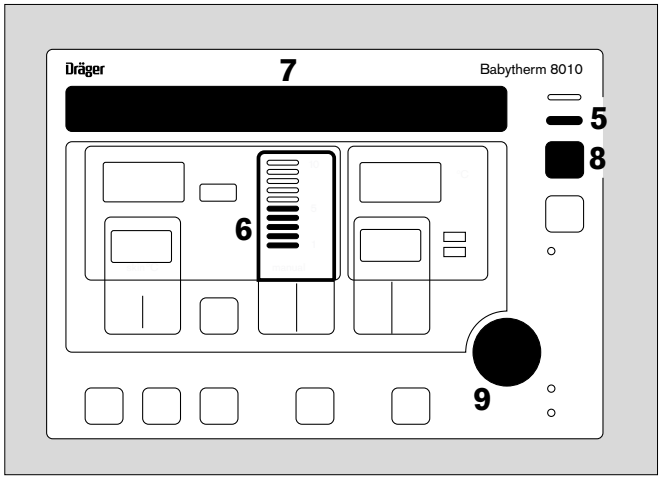
As a reminder for the required monitoring of core temperature, an audible alarm is generated every 14 minutes at heater levels 4 or higher.

5 Yellow LED starts blinking, and

- red central alarm light on the radiant heater starts flashing.

6 display of set heater level starts blinking, and

7 text message appears:
15 min. patient temp check required.
Press OK-button to confirm.



NOTE: After 15 minutes (one minute from time of message), the heater would shut off if alarm not acknowledged.

- Check patient temperature.

8 Press 🔕 key, its yellow LED will be lit continuously.

Or

9 press **»OK«** key.

The audible alarm will stop, the red central alarm light will go off, and the heater will be switched on again (will remain switched on).

NOTE: No reminder alarms are scheduled up to heater level 3.

NOTE: A skin temperature probe that might be connected simultaneously in manual mode will provide a skin temperature reading. It will, however, not control heater output.

Using Skin Temperature Control

In this mode of operation, the infant's skin temperature is controlled towards a set value using a temperature probe attached to the skin. When the measured value for skin temperature is lower than the set value, the radiant heater operates at a high output level. Similarly, it works with low output levels for high skin temperatures.

WARNING !

Skin temperature control must not be used with babies in thermic shock. Because of reduced peripheral blood flow the skin temperature of these babies occasionally lies well below the core body temperature. Using a skin temperature control system could lead to overheating. We recommend to set heater output manually when caring for patients with such conditions (see page 28).

WARNING !

Do not use skin temperature control for infants with a high temperature. Their skin temperature is significantly higher than normal so that controlling skin temperature would lead to hypothermia. We recommend to set heater output manually when caring for patients with such conditions (see page 28).

For setting heater output manually, see page 28.

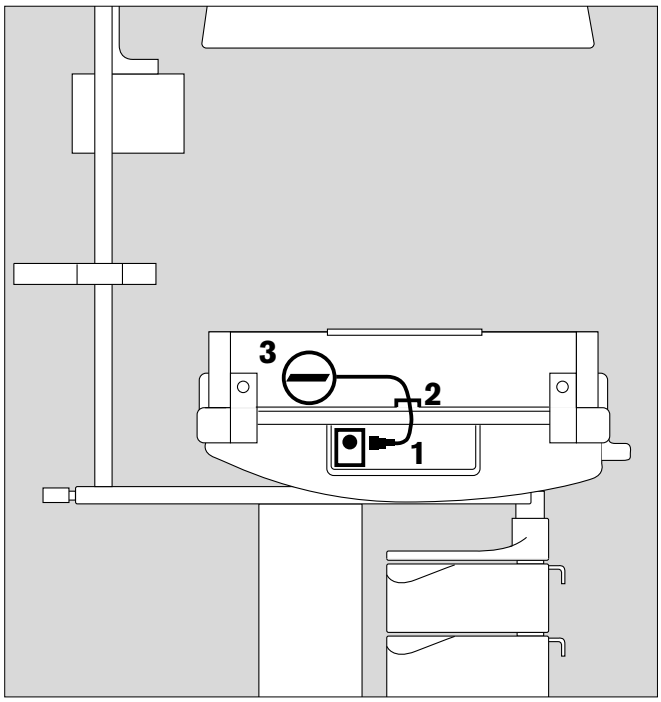
NOTE: Skin temperature should be the preferred operating mode under normal conditions. Follow Warnings and information on page 26.

Connecting skin temperature sensor

When using a Dräger skin temperature sensor (order separately, see "Ordering Information", page 65).

WARNING !

Always verify that sensor probe is specified and approved for use with Dräger Babytherm 8004/8010.



1 Plug **yellow** sensor connector into **yellow** jack.

2 Route sensor cable through one of the flexible grommets onto bed surface.

3 Remove protective paper from adhesive pad and place sensor probe on pad.

- Remove protective paper from other side and attach sensor probe with adhesive pad to an appropriate area of patient's skin.

NOTE: For replacement sensor pads, see "Ordering Information", page 65.

When using a disposable temperature sensor:

If the infant is lying on his back:

- Place sensor on the abdomen in the liver region.

If the infant is lying on his stomach:

- Place sensor on the back, preferably in the kidney region.

WARNING !

The sensor probe must never be placed under the baby. It would be measuring and attempting to control core temperature rather than skin temperature.

WARNING !

Never use skin temperature probes for rectally measuring core temperature !

Specifically, never use skin temperature probe rectally for skin temperature control as this would measure and use core instead of skin temperature for control.

- Secure sensor cable with adhesive tape as necessary to provide strain relief.

WARNING !

When using skin temperature control mode, check infant skin condition at regular intervals and verify that skin temperature probe is securely attached. A detached probe will measure air temperature and the baby might become overheated.

NOTE: Always allow skin temperature probe to adjust to infant's skin temperature.

If a skin temperature probe is connected when switching on:

1 Babytherm suggests "Skin" temperature mode, yellow LED **»Skin«** in the key is blinking.

2 Display shows message:
Check skin sensor position
Press OK-button to confirm.

3 Press **»OK«** key.

4 Babytherm defaults to a set value of 36.5 °C or to the most recently used set value, respectively.

3 Press **»OK«** key = accept set value.

Or

5 press ↓ or ↑ key to set desired value.
Set value is adjustable in 0.1 °C increments.

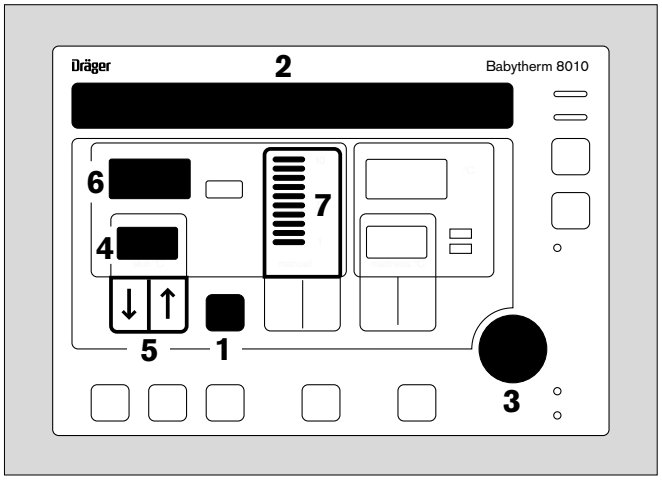
3 Press **»OK«** key = confirm set value.

4 New set value is displayed.

1 Yellow LED **»Skin«** is continuously lit,
"Skin temperature control mode" is active.

6 Measured values of skin temperature are displayed.

7 Display of heater output level changes according to the current infant skin temperature and the set skin temperature value.



If Babytherm was in "manual" mode:

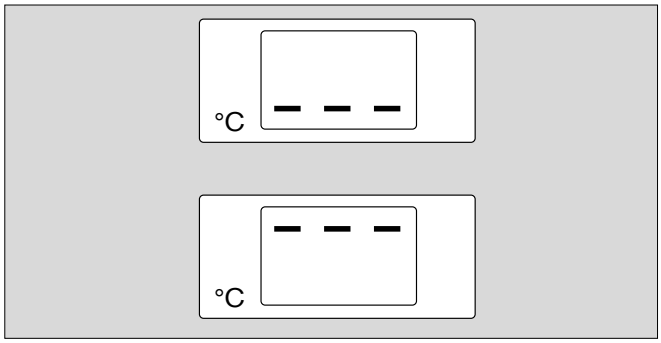
1 Press key, the yellow LED **»Skin«** will start blinking.
Proceed as above.

NOTE: Always allow time for the system to reach steady state! Deviations between set value for skin temperature and measured values are normally eliminated **within 5 to 15 min**.

NOTE: An infant's skin temperature changes frequently, for instance as a result of food intake or treatment procedures. Deviations of a tenth of a degree are normal.

Therefore:
Only change set value for skin temperature if core temperature needs to be corrected.

Exceeding the measuring range



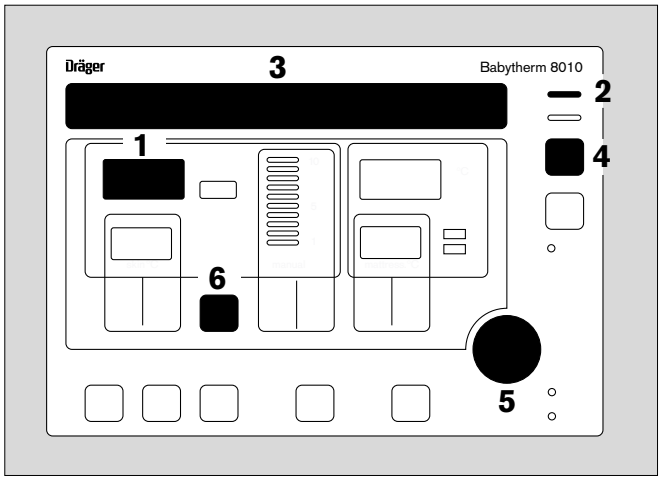
If temperature is outside the measuring range (15 °C to 42 °C):

- 3 dashes at the bottom of display = temperature below 15 °C,
- 3 dashes at the top of display = temperature above 42 °C.
- Refer to "Troubleshooting", page 54.

For temperatures below below 15 °C the message **Skin temp. below range** is displayed.

For temperatures below above 42 °C the message **Skin temp. above range** is displayed.

In case of a disconnected or defective sensor probe



1 Three blinking dashes in the center of display,

2 blinking red LED and audible alarm.
Additionally, flashing red central alarm light on the radiant heater.

3 Display shows message:
Plug in skin temp. sensor
Press OK-button to acknowledge.

Or

Skin temp. sensor fault
Press OK-button to acknowledge.

Audible alarm starts after 10 seconds.

- Immediately connect sensor plug or replace sensor.

Audible alarm can be silenced and red central alarm light be switched off for 10 minutes:

4 Press [🔔] key,

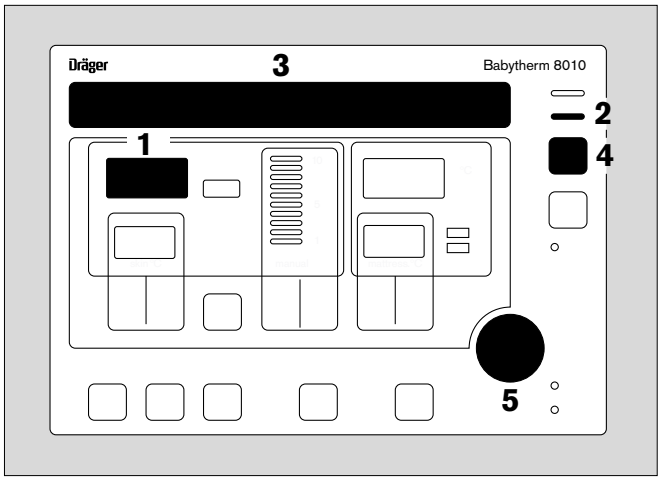
or

5 press **»OK«** key.

If the sensor problem cannot be remedied immediately:

6 Switch to "manual" mode.
Refer to "Setting Heater Output Manually", page 28.

Deviations greater than ±0.5 °C between set and measured value for skin temperature:



1 Display of skin temperature starts blinking.

2 Yellow LED starts blinking.
Additionally, flashing red central alarm light on the radiant heater.

3 Display shows message:
Skin temp. deviation above 0.5 °C
Press OK-button to acknowledge.

The alarm threshold for skin temperature deviations may be adjusted in configuration mode, see page 45.
The factory set default is ±0.5 °C.

Audible alarm can be silenced and red central alarm light be switched off for 10 minutes:

4 Press [🔕] key.

or

5 press **»OK«** key.

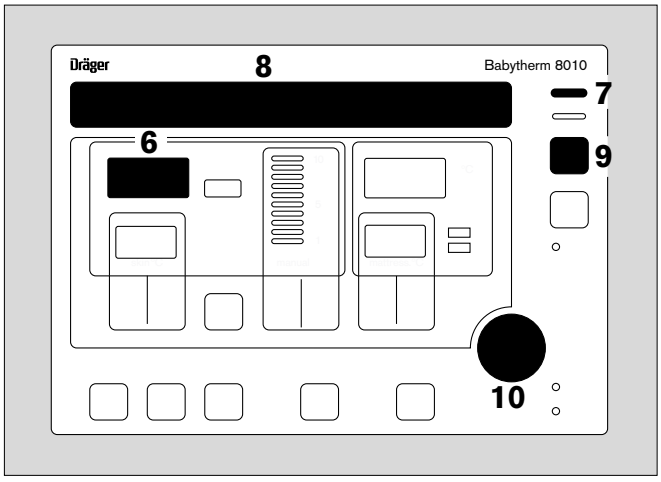
2 Yellow LED stays continuously lit.

- Red central alarm light is switched off.

After skin temperature has returned to a value within ±0.5 °C of set temperature, the yellow LED, red central alarm light, and audible alarm are turned off.

Prior to removing skin temperature probe temporarily, switch to "manual" mode.
Refer to "Setting Heater Output Manually", page 28.

Skin temperature above 39 °C



6 Display of skin temperature starts blinking.

7 Red LED starts blinking, together with audible alarm.
Additionally, blinking red central alarm light on the radiant heater.

8 Display shows message:
Skin temperature above 39 °C
Press OK-button to acknowledge.

7 Red LED is continuously lit.

In "manual Mode" the heater is switched off at this time.

Audible alarm can be silenced and red central alarm light be switched off for 2 minutes:

9 Press [🔕] key.

or

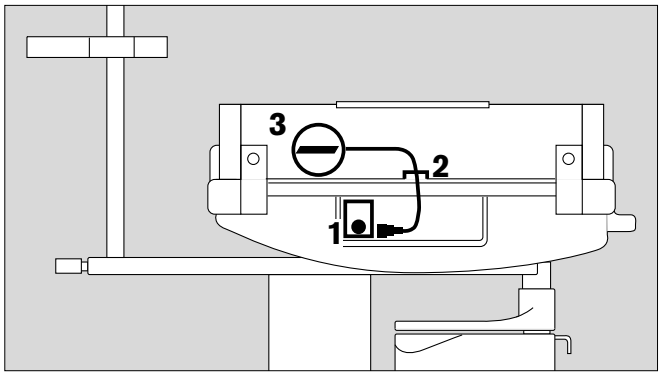
10 press **»OK«** key.

When skin temperature has returned to measured values below 39 °C, the alarm is automatically canceled.

ThermoMonitoring™

For improved feedback on thermal condition of a patient, we recommend measuring both central and peripheral skin temperatures (tummy-toe measurement).

Attaching peripheral skin temperature sensor



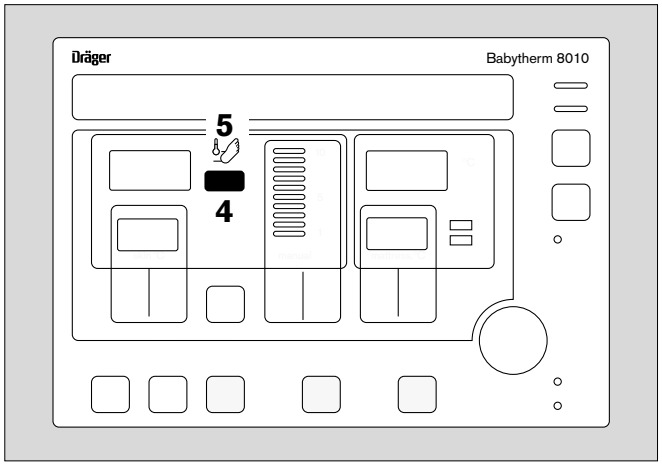
1 Plug **white** sensor connector into **white** jack.

2 Route sensor cable through one of the flexible grommets onto bed surface.

3 Remove protective paper from adhesive pad and place sensor probe on pad.

- Remove protective paper from other side and attach sensor probe with adhesive pad to patient's extremities, preferably to a foot.
- Secure with skin compatible adhesive tape.

Displaying peripheral temperature



4 Display of peripheral temperature is immediate with connection of peripheral skin temperature sensor.

5 The foot symbol for peripheral skin temperature is continuously lit.

If three dashes show in the display for peripheral skin temperature, please refer to "Troubleshooting", page 53.

NOTE: The measured value of peripheral temperature has no bearing on radiant warmer control. Both skin temperatures can also be displayed or queried when heater is operated in "manual" mode.

Data output via optional interface

Both temperatures can be presented in a graphical format using the following optional accessories:

– BabyLink® interface
– Interface cable MediCable
– Windows* PC with ThermoView™ software.

For installation and operation, refer to the components' respective operating instructions.

*Windows is a trademark of Microsoft Corporation

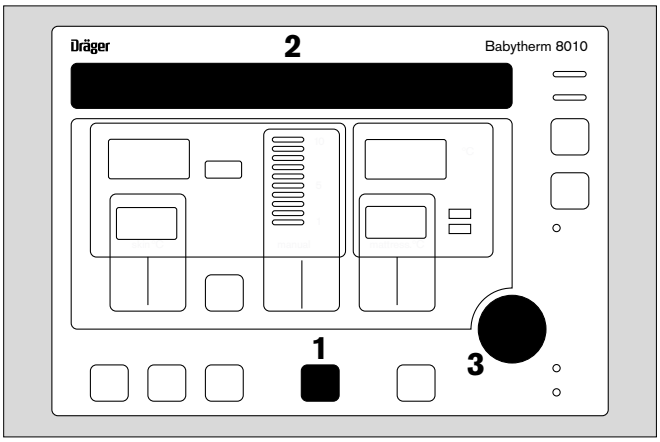
Switching Radiant Heater Off

1 Press key.

2 Display shows message:
Radiant heater OFF
Press OK-button to confirm.

3 Press **»OK«** key. Radiant heater is turned off.

1 Press key again = radiant heater can be turned on again, see page 28.



Using Mattress Heater (Babytherm 8010)

WARNING !

Always warm up mattress before placing patient.

Do not switch off Babytherm while a baby is lying on the gel mattress as this will result in uncontrolled cooling of patient.

Allow approximately 1 hour for thorough warm-up.

Setting a mattress temperature

Temperature can be varied in increments of 0.1 °C.

Setting temperature in the **normal range (36 °C to 38 °C):**

1 Display of current set value for mattress temperature

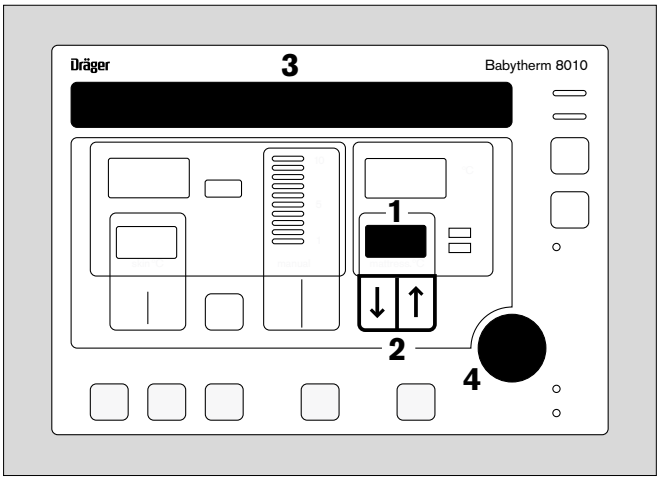
2 Press ↑ or ↓ key, until desired temperature is showing on the display.

3 Display shows message:
Set mattress temperature
Press OK-button to confirm.

If setting is not confirmed within 10 seconds, the message will disappear and the previous setting will remain in effect.

4 Press **»OK«** key = confirm new set value.

1 Display of new set value of mattress temperature.



Extending upper limit of setting range:

5 Press ↑ key, until

6 set value **38.0 °C** is displayed.

7 Display shows message:
Set mattress temperature
Confirm temp. above 38 °C with OK.

8 Press **»OK«** key = release extended range.

9 Yellow display **>38 °C** is now blinking.

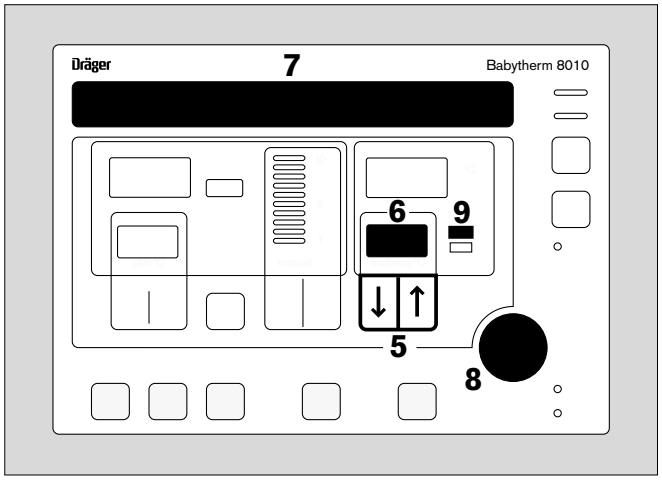
5 Press ↑ or ↓ key, until desired temperature is showing on the display.

7 Display shows message:
Set mattress temperature
Press OK-button to confirm.

8 Press **»OK«** key = confirm new set value.

6 Display of new set value of mattress temperature.

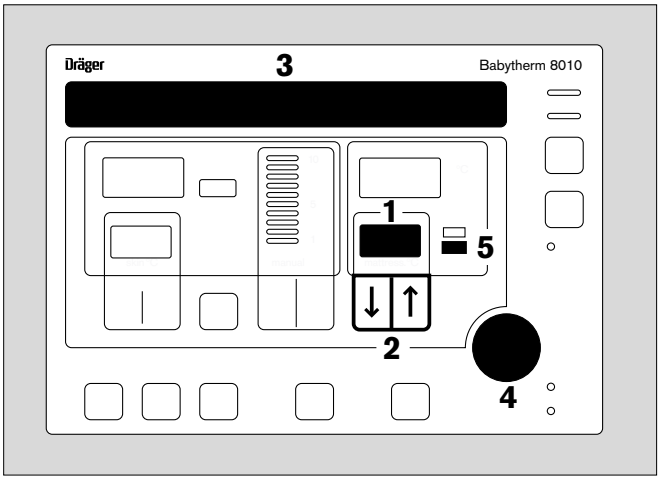
9 Yellow display **>38 °C** stays continuously lit.



Extending lower limit of setting range:

WARNING !

Use temperature settings in the lower extended temperature range only on the order of a physician. Watch patient particularly carefully!



1 Press ↓ key, until

2 set value **36.0 °C** is displayed.

3 Display shows message:
Set mattress temperature
Confirm temp. below 36 °C with OK.

4 Press **»OK«** key = release extended range.

5 Yellow display **<36 °C** is now blinking

1 Press ↓ or ↑ key, until desired temperature is showing on the display.

3 Display shows message:
Set mattress temperature
Press OK-button to confirm.

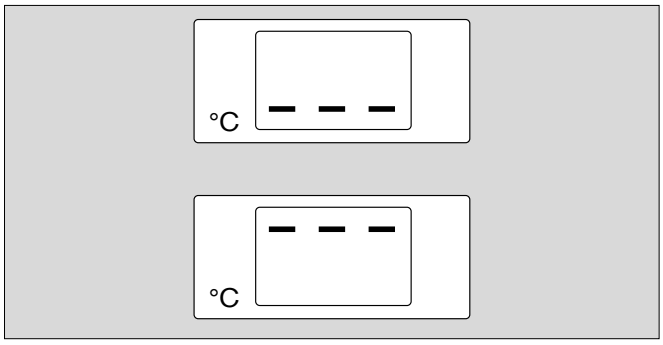
4 Press **»OK«** key = confirm new set value.

2 Display of new set value of mattress temperature.

5 Yellow display **<36 °C** stays continously lit.

Temperature out of range

If the temperature is outside the measuring range of 5 °C to 45 °C:



– Three lines in the **bottom** of the display = temperature is below 5 °C.

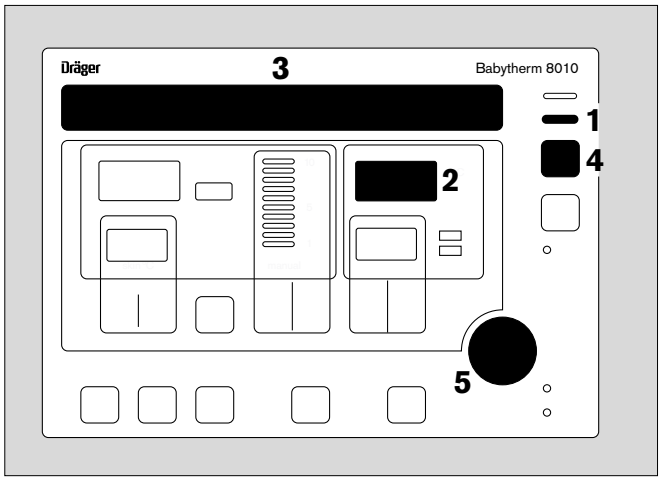
● Wait until mattress temperature reaches 5 °C.

– Three lines in the **top** of the display = temperature is above 45 °C.

● Wait until mattress temperature is below 45 °C.

For temperatures below 5 °C, the display message **Mattress temp. below 5 °C** will appear.

NOTE: These conditions may occur e.g. when Babytherm had been stored in ambient conditions beyond the range of 5 to 45 °C (41 to 113 °F).



Deviation from set temperature

In case of deviations greater than ±1 °C between set and measured mattress temperature values:

1 Yellow LED starts blinking.

2 Measured value of mattress temperature starts blinking.

3 Display shows message:
Mattress temp. deviation >1 °C
Press OK-button to acknowledge.

- Audible alarm starts, red central alarm light on radiant heater starts flashing.

Audible alarm can be silenced for 10 minutes:

4 Press [🔕] key,

or

5 press **»OK«** key.

1 The yellow LED is now lit continuously.

- Red central alarm light is switched off.

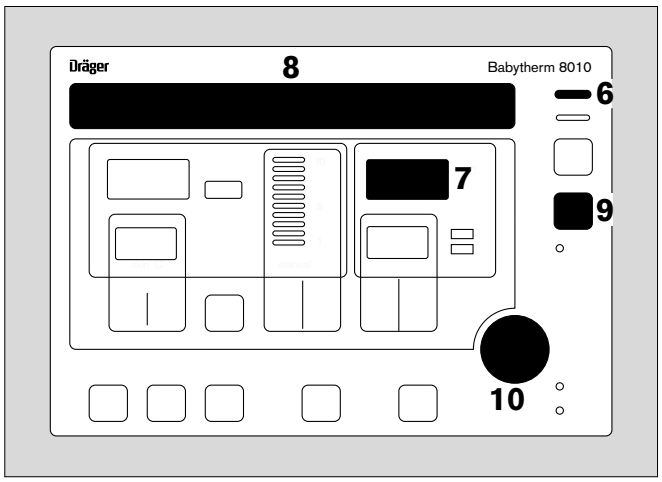
When the mattress temperature reading has returned to a value within ±1 °C of set temperature:

– Yellow LED, red central alarm light and audible alarm are switched off.

After the mattress heater is initially switched on:

– Audible alarm is silenced for 1 hour (warm-up).

1 Yellow LED is lit continuously.



Mattress temperature above 40 °C

6 Red LED **»40 °C«** starts flashing.

7 Measured value of mattress temperature starts blinking.

8 Display shows message:
Mattress temp. above 40 °C
Press OK-button to acknowledge.

- Audible alarm starts, red central alarm light on radiant heater starts blinking.

9 Press [🔕] key,

or

10 press **»OK«** key.

6 The red LED is now lit continuously.

- Red central alarm light is switched off.

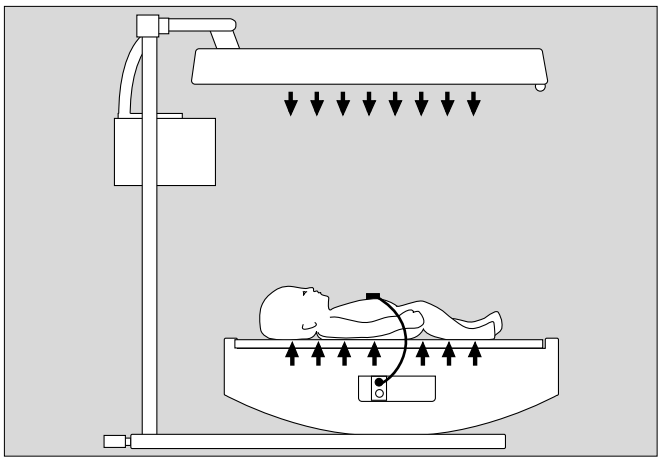
NOTE: The alarm is canceled automatically when temperature has decreased to less than 0.5 °C from set value.

Notes on Heater Settings

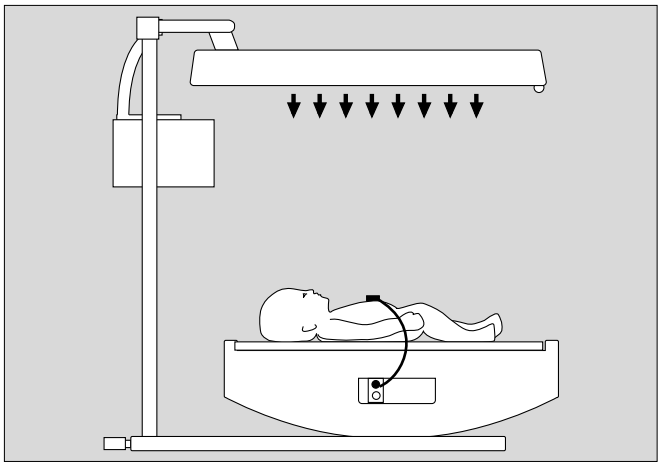
Notes on settings for use of the mattress heater with and without radiant heater.

Using radiant and mattress heater with a gel mattress (Babyherm 8010)

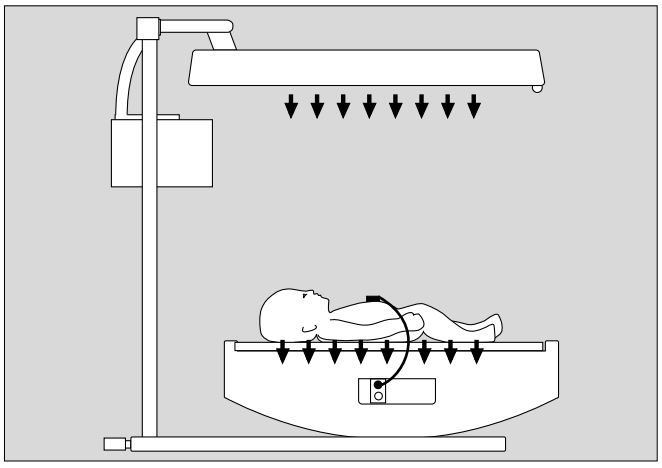
Normal settings:
The patient's core temperature will, in the long run, adjust to the mattress temperature. Therefore, set mattress heater to a core temperature appropriate for the particular patient, e.g. between 38.0 °C and 38.3 °C for a premature and to 37 °C for a term baby.
Set skin temperature to a value appropriate for the particular patient, e.g. to 37 °C for a premature and to 36.5 °C for a term baby.



- To add warmth:
  Set mattress temperature to desired skin temperature. If necessary, set skin temperature to a slightly higher value.



- To achieve a neutral heat balance:
  Set mattress heater temperature to an infant core temperature and skin control temperature to a skin temperature that together define the Neutral Thermal Zone for patient treated.



- To cool patient from below:
  Set mattress temperature to desired core temperature. If necessary, set skin temperature to a slightly lower value.

Mattress heater with gel mattress operated without radiant heater (Babytherm 8010)

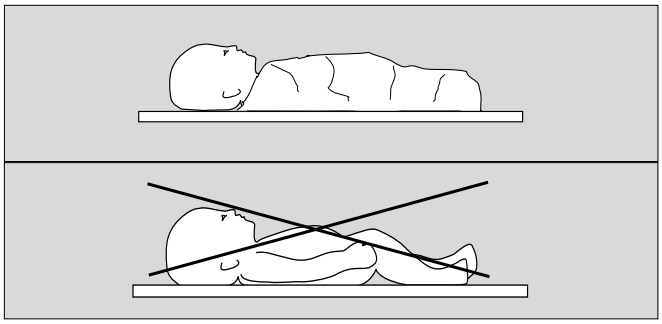
Normal settings:
The patient's core temperature will, in the long run, adjust to the mattress temperature. Therefore, set mattress heater to a core temperature appropriate for the particular patient, e.g. between 38.0 °C and 38.3 °C for a premature and to 37 °C for a term baby.

WARNING !

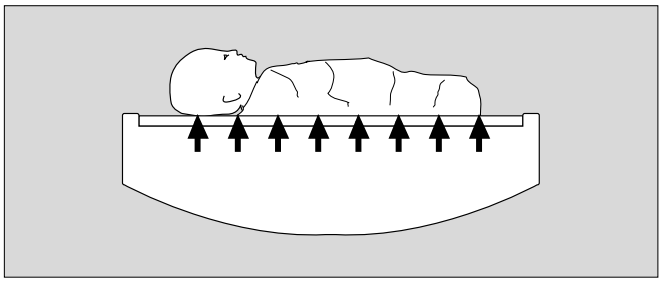
Check the baby´s core temperature at regular intervals and adjust temperature setting to individual patient needs.

- Always cover patients, and/or dress them.

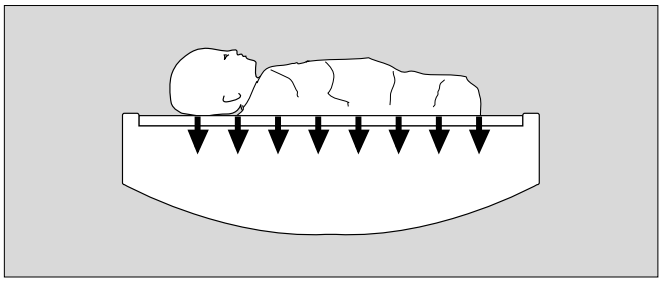
NOTE: Do not obstruct conductive heat transfer by blankets or other insulating covers placed underneath the patient.



- To add warmth:
  Set mattress temperatue to core temperature desired, or slightly higher in order to accelerate warm-up.



- To cool patient:
  set mattress temperature below current core temperature, e.g. to **36 °C**.

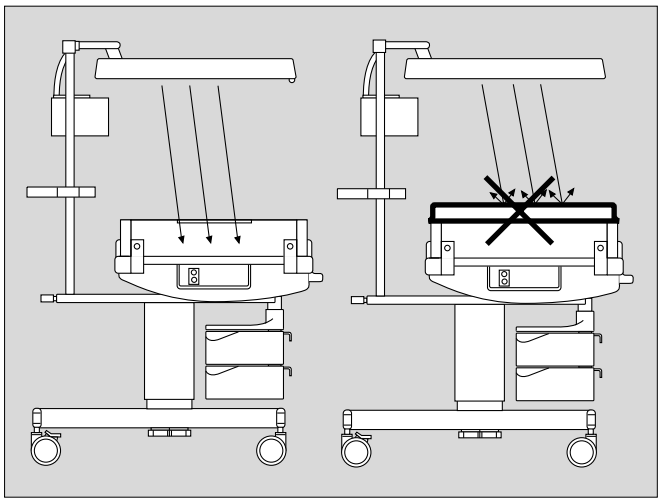


Using radiant heater only (Babytherm 8004)

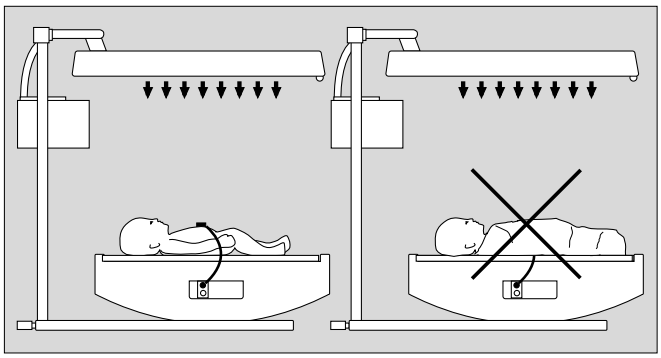
WARNING !

Check the baby´s core temperature at regular intervals and adjust temperature setting to individual patient needs.

- Do not use bassinet covers. Otherwise, the radiant heater will not have the intended effect. The acrylic hood is not transparent for infared radiation from the radiant heater.



- Do not cover or dress patient. Otherwise, the radiant heater effect is impaired in an uncontrolled fashion.



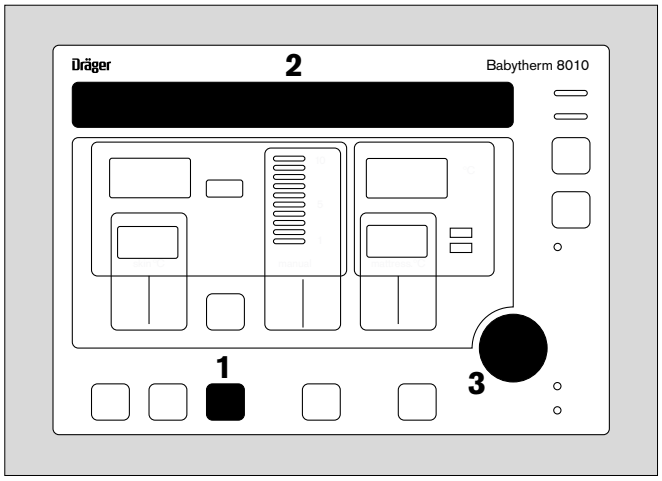
Using Phototherapy (Available Option)

WARNING !
Always use patient eye protection when using phototherapy.

WARNING !
Always consider differentiated diagnosis for patient so life sustaining measures are not delayed.

WARNING !
Check the baby´s core temperature at regular intervals. Phototherapy increases heat transfer to patient.
Measure patient's bilirubin level at regular intervals.

- Swivel radiant unit over patient. Phototherapy lights must be positioned vertically above patient for full effectiveness of the therapy.



Switching phototherapy lights on

1 Press key, yellow LED in the key starts blinking.

2 Display shows message:
Phototherapy: Use eye protection
Press OK-button to start XX:XX:XX.

XX:XX:XX = time from the first activation of phototherapy for the baby up to the switch off of the complete Babytherm or up to the reset of the counter.

3 Press **»OK«** key = phototherapy lights are switched on.

2 Display shows for 5 seconds:
Phototherapy duration XX:XX:XX

1 Yellow LED in key is now continuously lit.

If radiant heater is operated in "manual" mode:

- Reduce heater output approximately 3 levels down from setting used while phototherapy lights were off.

NOTE: Radiant heater output is adjusted automatically to patient needs when operated in "Skin" mode.

To reset the babycounter phototherapy

1 Press key for 3 seconds,

2 Display shows:
Phototherapy duration XX:XX:XX
Press OK to reset the counter.

3 Press **»OK«** key = reset,

3 Display shows:
Phototherapy duration 00:00:0X

Switching phototherapy lights off

1 Press key

2 Display shows message
Phototherapy OFF
Press OK-button to confirm.

3 Press **»OK«** key = phototherapy lights switched off.

1 Yellow LED in key is now off.

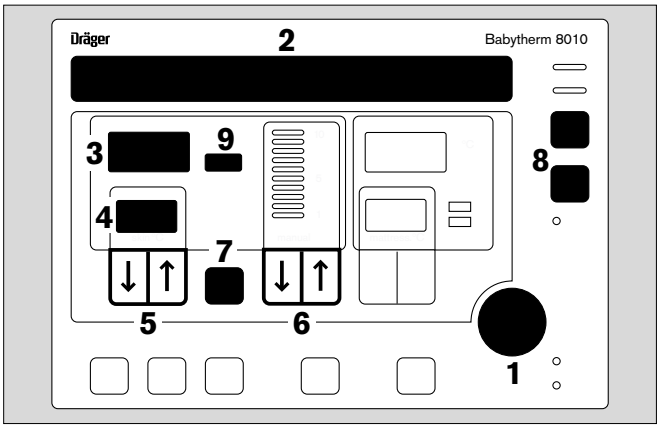
Configuration Mode

Possible Activities

Code	Activity
c01	Displaying current software version
c02	Selecting skin temperature alarm threshold
c03	Adjusting speaker volume for alarms
c04	Hours of operation, phototherapy
c05	Testing control panel keys
c06	Testing nurse call
c07	Selecting language
c08	Adjusting display contrast
Err	Error reporting

NOTE: The control panel keys and displays have a different purpose/meaning than in radiant heater operation mode!

1 Activate/cancel configuration mode
2 Information regarding current activity
3 Abbreviation of current activity
4 Code of current activity
5 Advance to / back to activity
6 Increase/decrease values for activity selected
7 Activate/leave error reporting mode
8 State changes within activities
9 Display setting for current activity



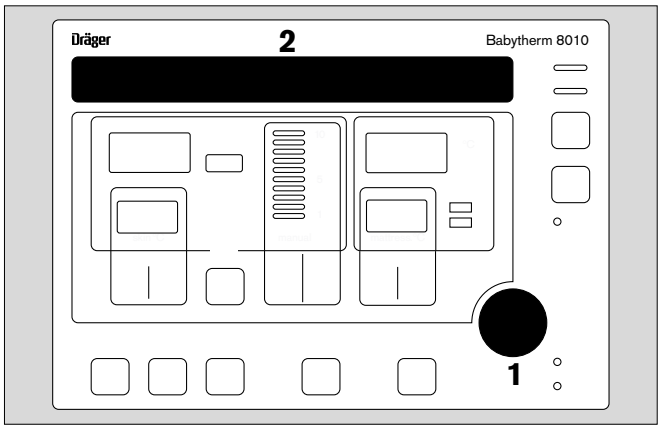
Activating configuration mode

1 Keep »OK«-button pressed for 3 seconds.
A brief alert sound is generated.

2 Display message:
Configuration mode
Press OK-button to start.

1 Press OK button again. A brief alert sound is generated. Configuration mode is now active.

The device defaults to activity »**c01**« and displays the current software version

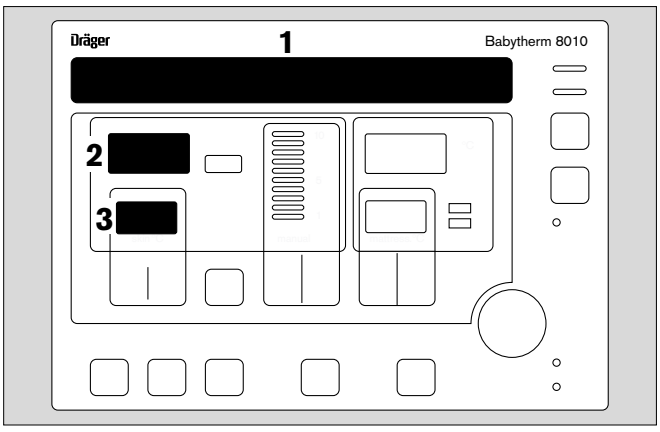


Displaying the software version

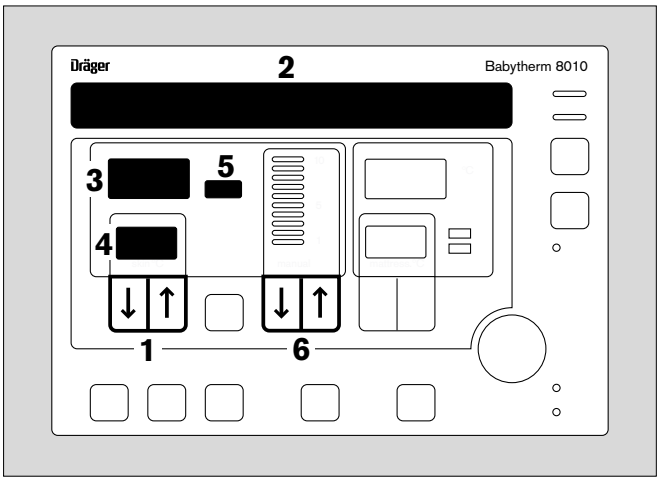
1 Display message:
Configuration mode
Mode c01: Software version.

2 The current software version is displayed, e.g.: **1.00**.

3 The current activity code **c01** is displayed.



Selecting skin temperature alarm threshold



1 Press ↑ key briefly.

2 Display message:
Configuration mode
Mode c02: Max. skin temperature fault.

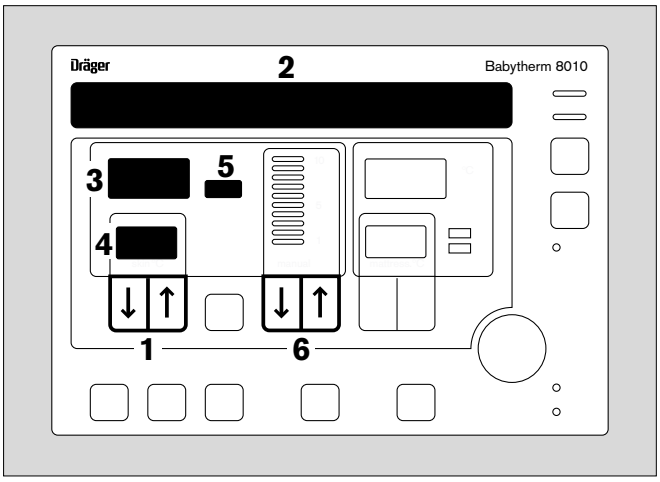
3 Abbreviation for this activity is displayed: **SdE**.

4 The current activity code is displayed: **c02**.

5 Display of set skin temperature alarm threshold where no alarm is yet generated.
Factory default: **0.5**.

6 Press keys ↑ or ↓, until desired value is displayed.
Values from 0.3 to 1.0 °C selectable in 0.1 °C increments.

Adjusting speaker volume for alarm tone sequences



1 Press ↑ key briefly.

2 Display message:
Configuration mode
Mode c03: Soft alarm start volume.

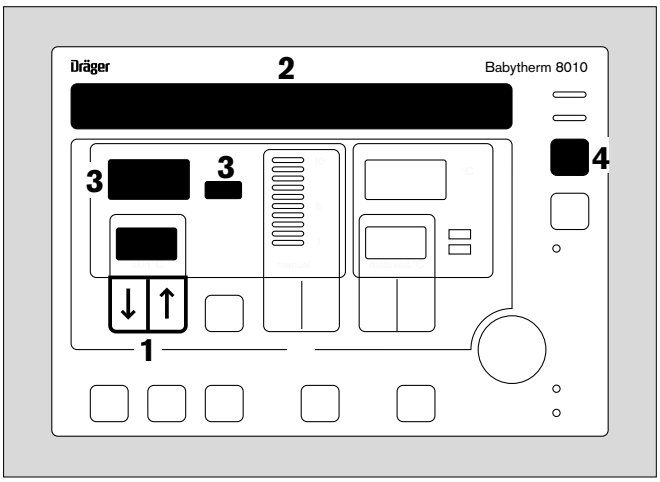
3 Abbreviation for this activity is displayed: **SSL**.

4 The current activity code is displayed: **c03**.

5 Display of set speaker volume
Factory default: **2**.
A brief audible alarm tone sequence is generated with that volume.

6 Press keys ↑ or ↓, until desired value is displayed.
Values from 1 to 8 selectable.
A brief audible alarm tone sequence is generated with the new volume setting.

Displaying phototherapy hours of operation



1 Press ↑ key briefly.

2 Display message:
Configuration mode
Mode c04: Time counter phototherapy.

3 Display of time of operation up to 1000 hours.

4 Press 🔕 key for 3 seconds. The counter is reset to "0".

NOTE: This activity to be performed at time of phototherapy bulb exchange.

Tasting control panel keys

1 Press [↑] key briefly.

2 Display message:
Configuration mode
Mode c05: Keyboardtest (inactive).

3 Abbreviation for this activity is displayed: **but**.

4 The current activity code is displayed: **c05**.

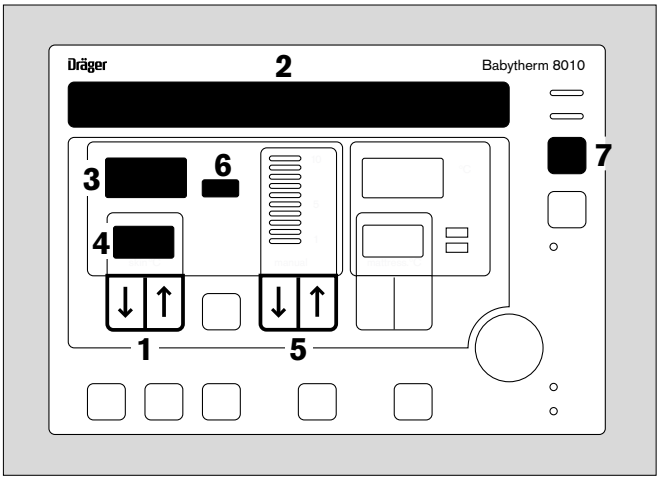
5 Press key [↑] or [↓], test is activated.

2 Display message:
Configuration mode
Mode c05: Keyboardtest (active).

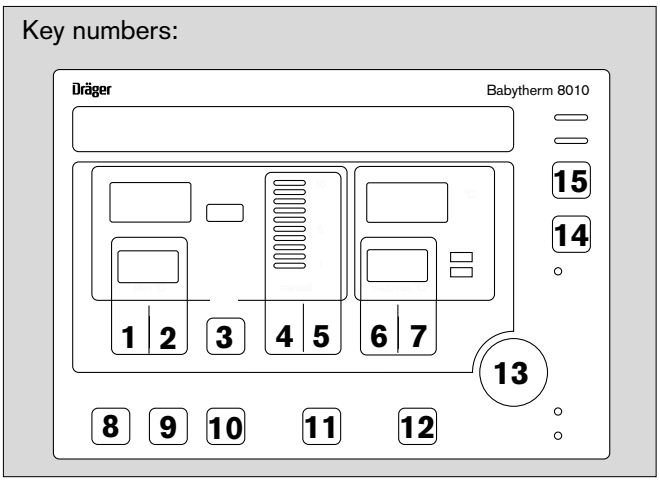
● Press key to be tested.

6 A number sequence will appear in the display:
1. digit = number of keys pressed simultaneously,
2. and 3. digit = ID of key last pressed.

7 Keep [🔕] key pressed for 2 seconds to end the test.



Key numbers:



Testing nurse call

1 Press [↑] key briefly.

2 Display message:
Configuration mode
Mode c06: Nurse call relay.

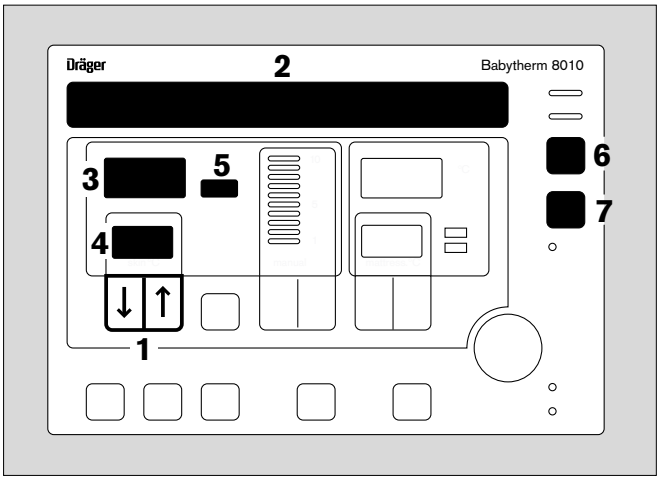
3 Abbreviation for this activity is displayed: **Nuc**.

4 The current activity code is displayed: **c06**.

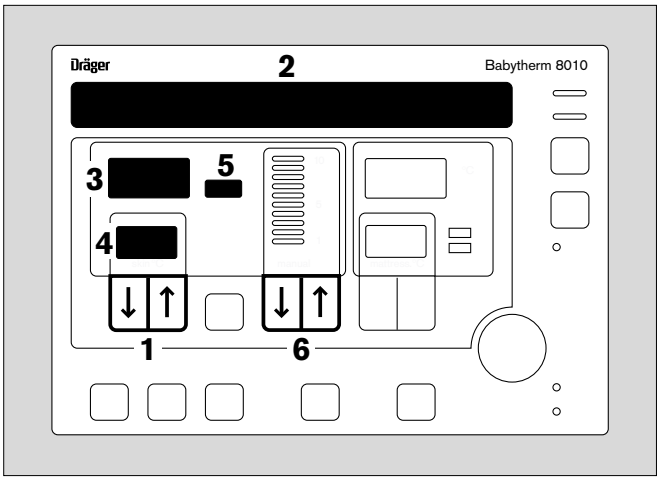
5 Display showing **0** = nurse call relay open.
Display showing **1** = nurse call relay closed.

6 Press [🔕] key, the relay is switched.

7 Keep [Check] key pressed for 4 seconds. The relay becomes active.
An Inop-alarm is generated: red LED »**Inop.**« will light up accompanied by a continuous audible alarm.



Selecting language



1 Press ↑ key briefly.

2 Display message:
Configuration mode
Mode c07: Display language –> English.

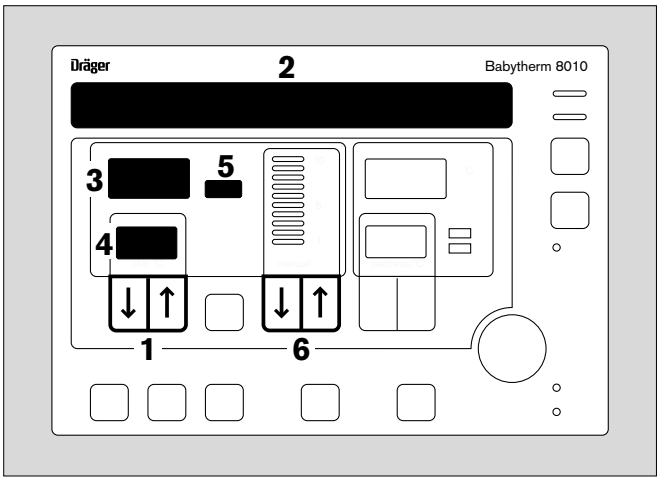
3 Abbreviation for this activity is displayed: **LAN**.

4 The current activity code is displayed: **c07**.

5 Number code of selected language is displayed.
Factory default for US: **2** = English.

6 Press keys ↑ or ↓, until number code of desired language appears in the display.
Available settings: 1 through 11.

Setting display contrast



1 Press ↑ key briefly.

2 Display message:
Configuration mode
Mode c08: Display contrast.

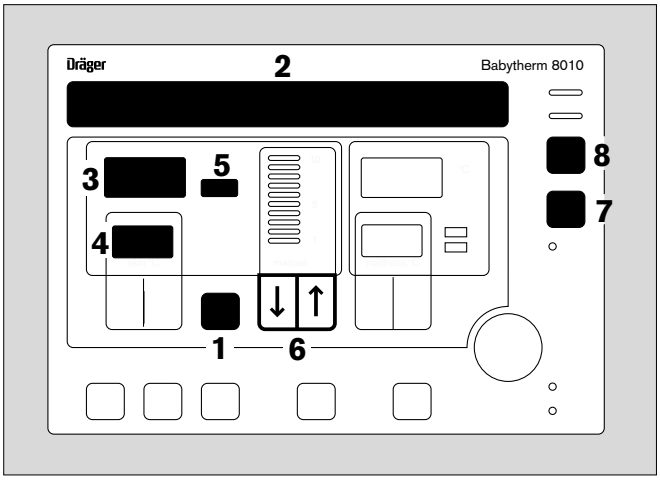
3 Abbreviation for this activity is displayed: **CON**.

4 The current activity code is displayed: **c08**.

5 Display of contrast setting
Factory default: **128**.

6 Press keys ↑ or ↓, until desired contrast is displayed.
Values from 1 to 255 selectable in increments of 1.

Reading error cache



1 Press key, error reporting is now active

2 Display message:
Configuration mode
Error memory.

3 Displaying error code: **FXX**.

4 Displaying: **Err**.

5 Frequency of error displayed here.

6 Pressing keys ↑ or ↓ will call up the next error code.

7 Pressing Check key will invoke the device self test.

8 Keeping 🔕 key pressed for 3 seconds will erase error cache.

Return radiant heater to operation mode:

- Press »**OK**«-key.

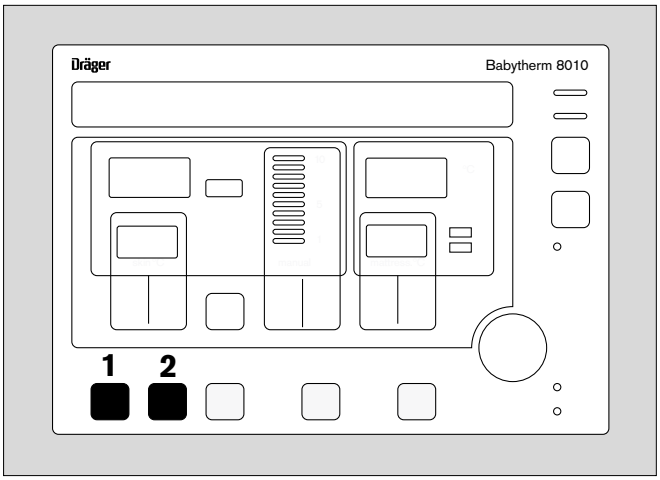
Switching Lighting On/Off

1 Press key, bed surface is now illuminated by **work light**.

1 Press key again, work light is switched off.

2 Press key, bed surface is now illuminated by **night light**.

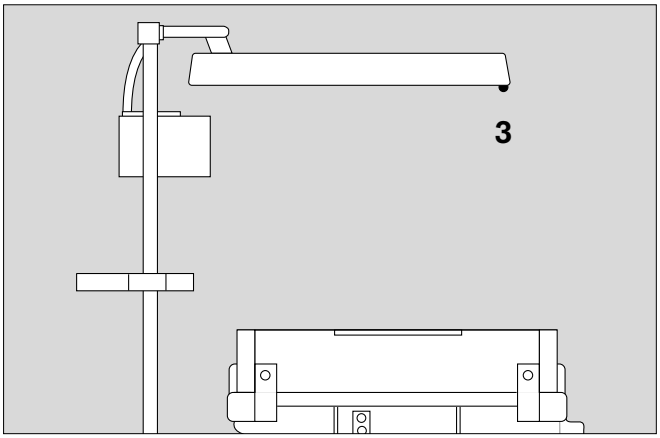
2 Press key again, night light is switched off.



Central Alarm

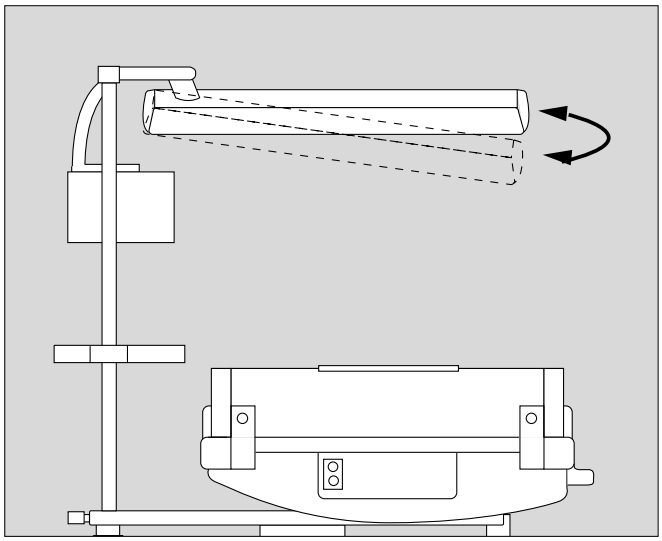
3 The red central alarm light on the radiant heater unit starts blinking with any alarm being activated.

It will be switched off after acknowledging alarms.



Taking X-Rays

Babytherm 8004

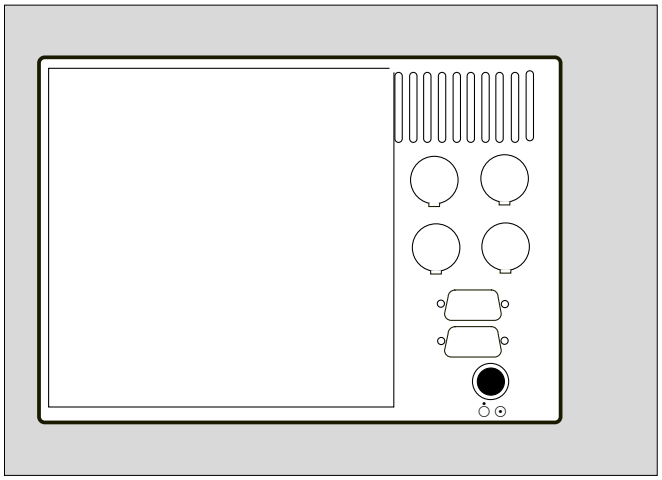


- Pull x-ray tray out from under mattress.
- Place x-ray cassette in the appropriate location on the tray.
  Place infant in center of mattress.
- Swivel radiant heater sideways. Heater will continue warming patient.
- Place x-ray machine above bed surface.
- When x-ray procedure is finished, remove cassette from tray end return tray.
- Swivel radiant heater back into its normal position.

Babytherm 8010

- Place x-ray film cartridge directly underneath patient.
- Swivel radiant heater sideways. Heater will continue warming patient
- Place x-ray machine above bed surface.
- When x-ray procedure is finished, remove cassette from under the patient.
- Swivel radiant heater back into its normal position.

Shutting Down



- Press On/Off button.
  Green LED indicating operation will be switched off.
- Remove power plug from wall outlet.

Care

The Babytherm 8004/8010 infant warmer system must be thoroughly cleaned and disinfected after each patient, or at least once a week. Perform any disinfection procedures according to established hospital procedures as well as to the following additional instructions.

WARNING !

Always follow accepted hospital procedures for handling equipment contaminated with body fluids.

For the cleaning and disinfecting of accessories, refer to their respective operating instructions.

Disassembly

- Switch off all device(s), pull power plugs), and turn off all pressurized oxygen and air if used.

WARNING !

Always disconnect power supply before cleaning and disinfecting.

- Remove any ancillary patient care equipment from unit.
- Remove mattress from bed.
  Always store mattress flat.

CAUTION !

Do not fold gel mattress!

- Take off flexible U-grommets.

Cleaning / Disinfecting / Sterilizing

CAUTION !

Certain components of the bassinet consist of materials that are sensitive to certain organic solvents sometimes used for cleaning and disinfecting (e.g., alcohols, phenols, halogen releasing compounds, oxygen releasing compounds, strong organic acids, etc.). Exposure to such substances may cause damage that is not always immediately recognized. Sterilization of the bassinet itself with ethylene oxide (EtO) is also not recommended.

CAUTION !

Do not expose Babytherm 8004/8010 to high levels of ultraviolet radiation. This may cause cracks in the PMMA (Plexiglas®) parts.

To prevent any damage, we recommend that only detergents and disinfectants are used that are compatible with the materials used in the bassinet and its components and accessories, e.g. surface disinfectants on the basis of

– aldehydes, or
– quarternary ammonium compounds

for disinfection procedures.

Ensure that all disinfectants are registered with the U.S. Environmental Protection Agency for use as intended. Always follow the instruction labels specifically with respect to prescribed concentrations and the necessary exposure times.

Cleaning and Disinfection Procedures

- **bassinet, inside and outside**
- **surrounding panels, inside and outside**
- **bed surface**
- **Plexiglas® cover**
- **mattress;**
- **chassis, including attachments**

- Remove visible impurities with a disposable cloth wetted in a detergent.
- Wipe-disinfect surfaces.
- Wipe and dry with a clean, damp cloth.

CAUTION !

Do not launder mattresses in an automatic washing machine. Do not autoclave mattresses.

- **Silicone U-grommets**

- Wash with a detergent and rinse with clear water.
- Bath disinfect parts. Then rinse in clear water and dry;

or

- sterilize at 120 °C (248 °F).

- **Phototherapy lenses**

CAUTION !

Only use detergents/disinfectants with a ph value of 7 to 9 for phototherapy lenses.

Before Next Use

- Reassemble components, refer to pages 18 through 22.
- Following wipe disinfection, operate unit for a few hours without a patient, in order to eliminate any disinfectant residues (at mattress temperature setting of 37 °C).
  Radiant heater in "manual" mode set to heater level 3.

Before a patient is placed in the Babytherm 8004/8010:

- Set up accessories for therapy as needed.
- Check operational readiness, see pages 23 to 25.
- Verify that mattress is sufficiently preheated.

Inspection and Maintenance

WARNING !

To avoid any risk of infection, clean and disinfect bassinet and accessories before any maintenance according to established hospital procedures – this applies also when returning units or parts for repair.

WARNING !

Maintenance work on the Babytherm 8004/8010 may be performed by trained and factory authorized staff only.

WARNING !

Always disconnect power supply before servicing.

WARNING !

Never operate the infant warmer system if it has suffered physical damage or does not seem to operate properly. In this case, always refer servicing to properly trained and factory authorized service personnel.

Replacement of Parts

Gel mattress	Cover small cuts or other damages in the film with adhesive tape.
Silicone U-grommets	Replace when brittle or sticky.
Temperature measuring system	Verify proper operation at time of preventive maintenance.
Lamps for work and night light	Replace if defective by factory trained technician.
Phototherapy lamps	Replace complete set (6 bulbs) if defective or after 1000 hours of operation by factory trained technician.

Preventive Maintenance Intervals

Inspection and Preventive Maintenance	every twelve (12) months by factory trained technicians

General

Problem/Message	Likely Causes	Remedy
Red LED ⇉ lit, continuous audible alarm.	No power	Check that Babytherm is plugged in. Check that power is not interrupted Call building maintenance. Call DrägerService.
Red LED **»Inop.«** lit, continuous audible alarm.	Device malfunction	Call DrägerService.

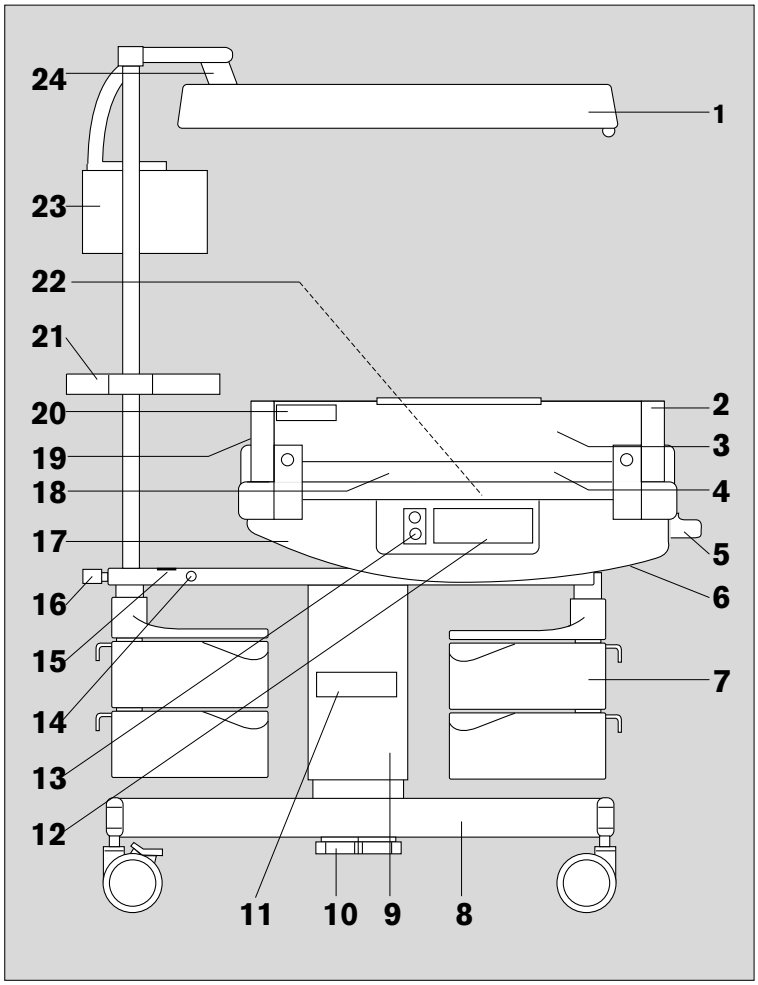
Mattress Heater

Problem/Message	Likely Causes	Remedy
Yellow LED flashing, Measured value display blinking, message: **Mattress temp. deviation >1 °C**, audible alarm.	Measured value of mattress temperature has deviated from set value by more than ±1 °C.	When using in combination with radiant heater: Reduce radiant heater output level.
Red LED flashing, Measured value display blinking, message: **Mattress temp. above 40 °C**, audible alarm.	Mattress temperature above 40 °C.	When using in combination with radiant heater: Reduce radiant heater output level.
Three upper segments blinking in measured value display, message: **Mattress temp. sensor fault**, audible alarm.	Temperature sensors in heater surface defective.	Call DrägerService.
Three upper segments blinking in measured value display.	Mattress temperature above 45 °C.	Wait until temperature is below 45 °C.
Three lower segments blinking in measured value display, message: **Mattress temp. below 5 °C**.	Mattress temperature below 5 °C.	Wait until temperature is above 5 °C.

Radiant Heater

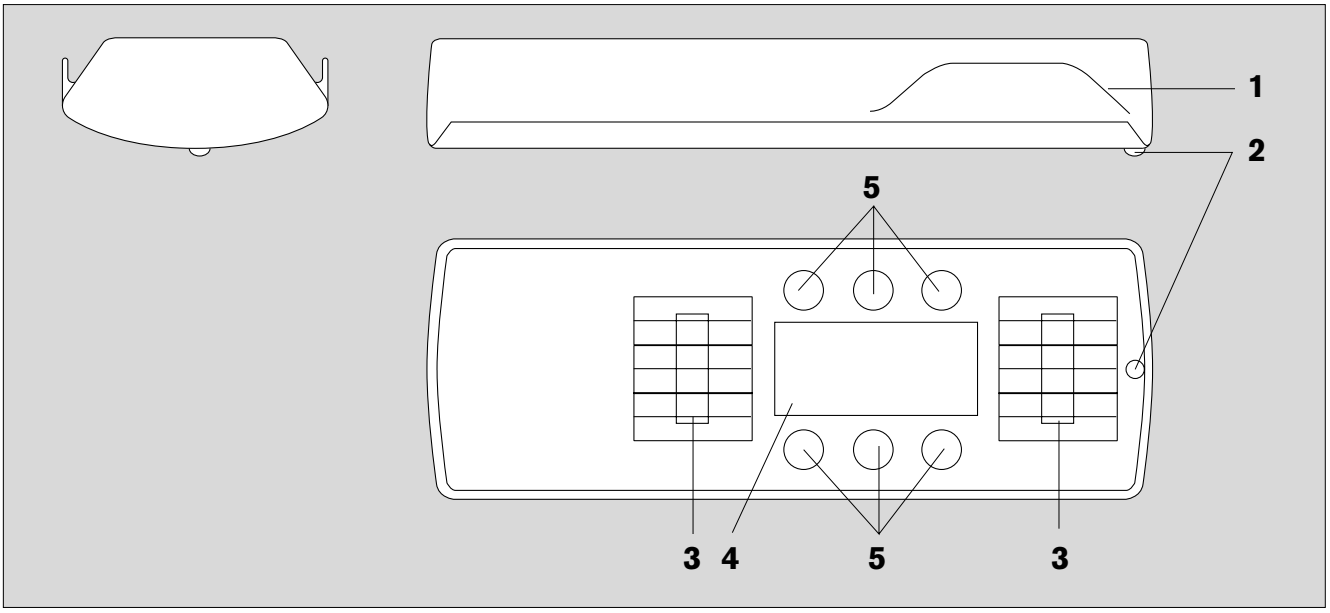
Problem/Message	Likely Causes	Remedy
Yellow LED flashing, Measured value display blinking, message: **Skin temp. deviation > x.x °C,** audible alarm.	Measured value of skin temperature has deviated from set value by more than ± 0.5 °C.	When measured value is below set value: Check that skin temperature probe is positioned correctly. When measured value is above set value: **Check core temperature immediately!**
Red LED flashing, three middle segments blinking in measured value display, message: **Plug in skin temp. sensor**, audible alarm.	Skin temperature probe not connected or Defective sensor.	Check plug connector and jack. Switch to »Manual« operating mode, replace sensor, then switch back to "Skin" mode.
Red LED flashing, three middle segments blinking in measured value display, message: **Skin temp. sensor fault**, audible alarm.	Defective sensor.	Switch to »Manual« operating mode, replace sensor, then switch back to "Skin" mode.
Red LED flashing, blinking display of measured value, message: **Skin temperature above 39 °C**, audible alarm.	Skin temperature >39 °C.	Check that skin temperature sensor is properly attached. Check whether external heat sources are warming infant (e.g. sun light, phototherapy).
Three upper segments blinking in measured value display, message: **Skin temp. above range**. Three lower segments blinking in measured value display, message: **Skin temp. below range**.	Skin temperature >42 °C. Skin temperature <15 °C.	Check that skin temperature sensor is properly attached.
Three upper segments blinking in measured value display, message: **Peripheral temp. above range**. Three lower segments blinking in measured value display, message: **Peripheral temp. below range**.	Peripheral (toe) temperature >42 °C. Peripheral (toe) temperature <15 °C.	Check that skin temperature sensor is properly attached.
Red LED flashing, three middle segments blinking in measured value display, message: **Peripheral temp. sensor fault**, audible alarm.	Defective sensor.	Replace sensor.

Overview



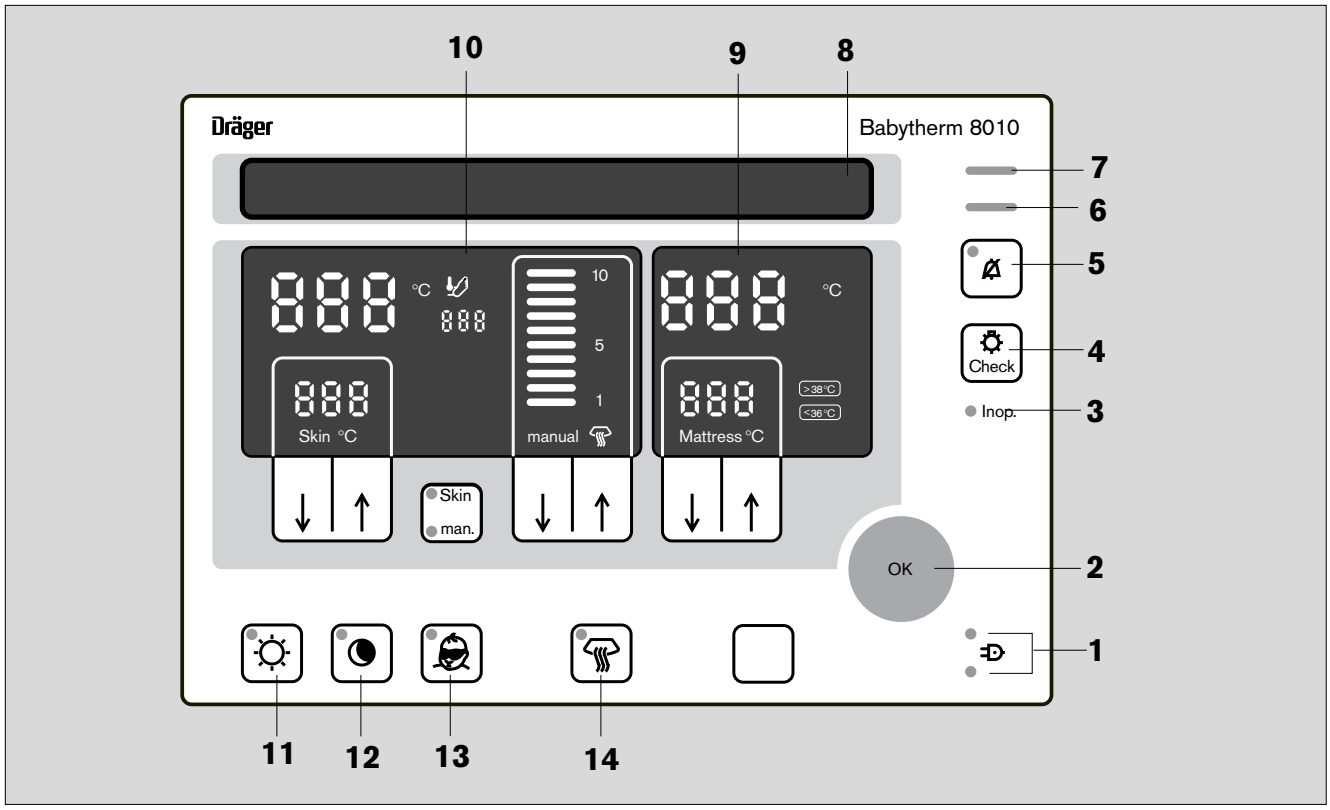
1 Radiant heater
2 End panel
3 Side panel
4 Inner panels (2 each, available option)
5 Handle with inner unlocking bar for tilting the bassinet
6 Bassinet mounted rail with hook for drainage canisters (available option)
7 Swivel cabinet (option)
8 Chassis with casters, 2 of which can be locked
9 Height adjustable column (available option)
10 Foot controls, for height adjustable column (9)
11 Height adjustment warning label
12 Main WARNING/CAUTION label
13 Skin temperature sensor connection:
top jack, yellow – measuring and controlling "tummy" skin temperature,
bottom jack, white – measuring peripheral ("toe") skin temperature
14 Grounding pin
15 Identification and rating plate
16 Accessory mounting rail
17 Bed assembly
18 Gel mattress for use with mattress heater;
Foam rubber mattress for use without mattress heater
19 Silicone U-grommets, (3 each)
20 Warning label "Never leave baby unattended..."
21 Support columns with monitor shelf and two side rail
22 X-Ray tray on the back side, Babytherm 8004 only (without illustration)
23 Controller with operating panel
24 Swivel joint for radiant heater (± 90°)

Radiant Heater



1 Handle
2 Central alarm light, flashes if an alarms needs to be acknowledged
3 Ceramic heater elements
4 Lighting (work light, night light)
5 Phototherapy lights (6)

Controller



1 Operation indicators:
Green LED lit for operation..
Red LED lit during power failure

2 **»OK«** key for confirming settings and to acknowledge alarms.
NOTE: If the **»OK«** key is not pressed within 10 seconds after changing a setting, the previous settings will remain in effect!

3 Red LED **»Inop.«**;
indicates device malfunction.

4 Key for testing LEDs, displays, speaker, and audible alarms.

5 Key for silencing audible alarms for 10 minutes.

6 Yellow alarm LED;
flashes for Caution level alarm,
stays lit when audible alarm has been silenced.

7 Red alarm LED;
flashes for Warning level alarm.

8 Text display, shows messages and prompts user to acknowledge/confirm.

9 Display and keypad for operating mattress heater

10 Display and keypad for operating radiant heater

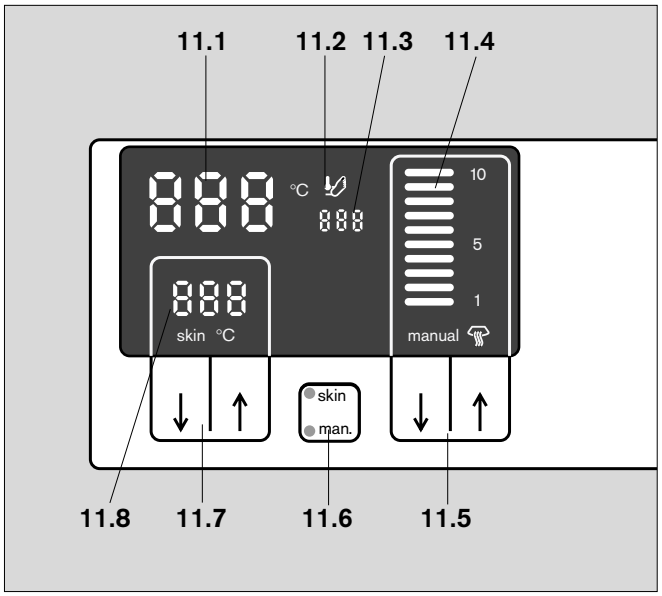
11 On/Off key for daytime (work) lighting;
yellow LED in key is lit during operation.

12 On/Off key for nighttime lighting;
yellow LED in key is lit during operation.

13 On/Off key for radiant heater;
yellow LED in key is lit during operation.

14 On/Off key for phototherapy lights (available option);
yellow LED in key is lit during operation.

Display and keypad for radiant heater



11.1 Display of measured value for "tummy" skin temperature

11.2 Foot symbol for peripheral ("toe") temperature; is lit when peripheral skin temperature sensor is connected.

11.3 Display of measured value for "toe" skin temperature; only while peripheral skin temperature sensor is connected.

11.4 Display of radiant heater output level;
level 1 through 3: green
level 1 through 3: yellow

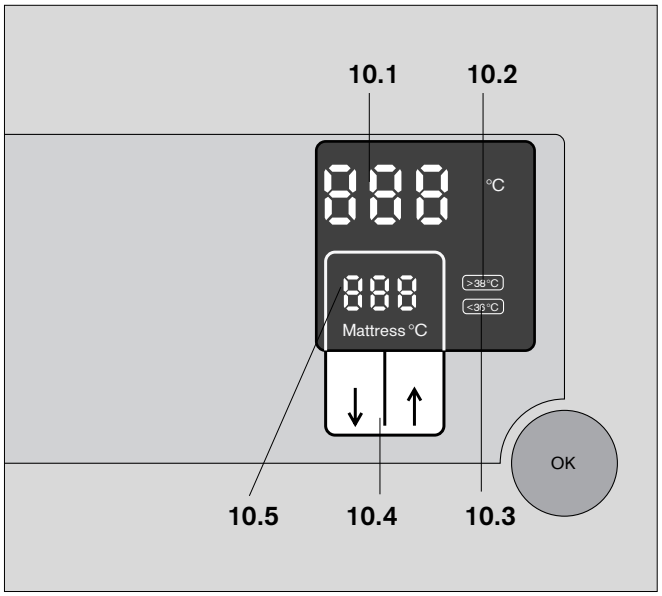
11.5 Keys to set radiant heater output levels

11.6 Keys to switch between operating modes **»man.«** (manual heater control) and **»Skin«** (skin temperature control);
yellow LED stays lit for the respective mode.

11.7 Keys for setting value for skin temperature

11.8 Display of skin temperature set value

Display and keypad for mattress heater (Babytherm 8010 only)



10.1 Display of measured mattress temperature

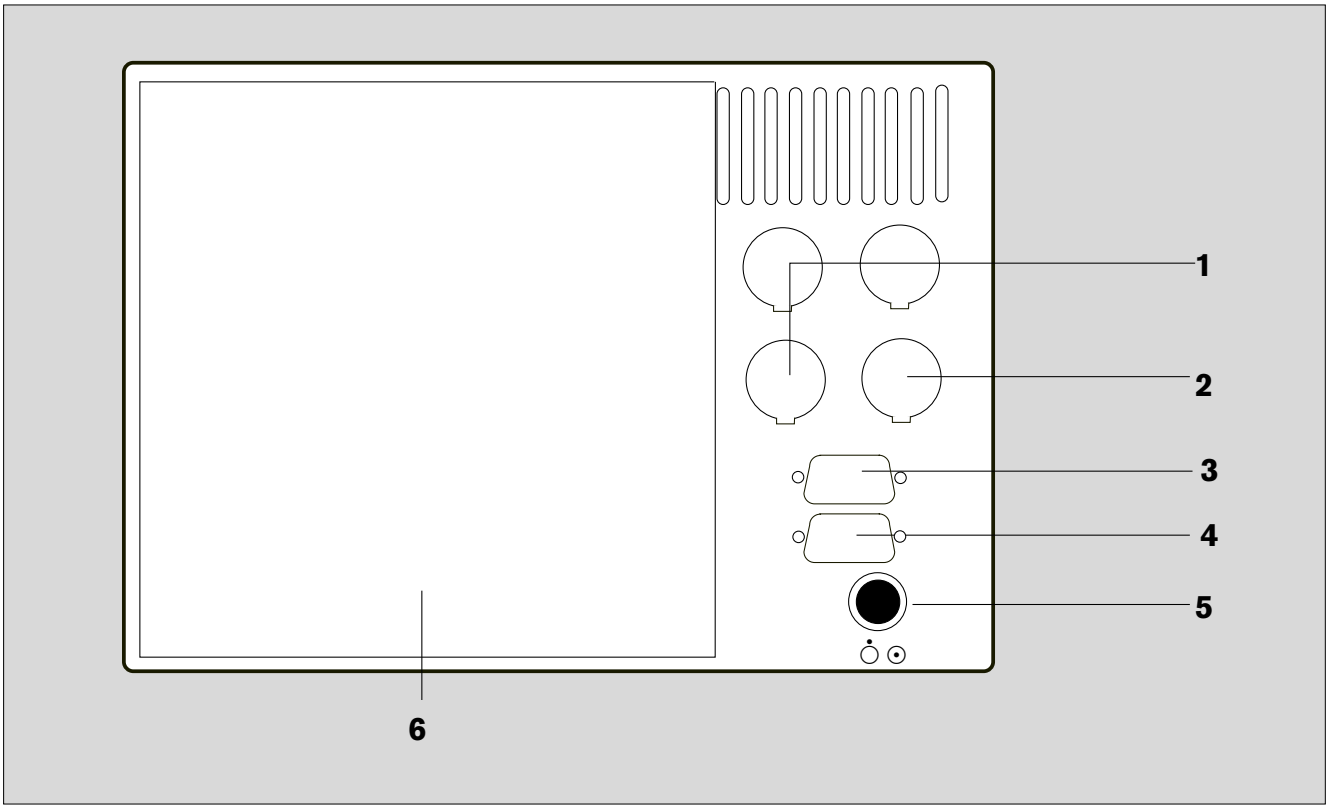
10.2 Indicator for upper extended range >38 °C

10.3 Indicator for lower extended range <36 °C

10.4 Keys for setting value for mattress temperature

10.5 Display of mattress temperature set value

Controller – Rear View



1 Input ports for connecting nurse call of up to three devices in the work place (connections for central alarm).

2 Output port for connecting to paging, nurse call systems (connection for central alarm).

3 RS 232 interface (modem), available option

4 RS 232 interface (BabyLink), available option

5 Controller power switch
○ = OFF, ⊙ = ON.

6 Cover panel

Labels

1 Main WARNING/CAUTION label

WARNING !

DO NOT SWITCH OFF BABYTHERM WHILE A BABY IS LYING ON THE GEL MATTRESS AS THIS WILL RESULT IN COOLING OF THE PATIENT

WARNING !

CHECK BABY'S TEMPERATURE AND SKIN CONDITION AT REGULAR INTERVALS AND ADJUST TEMPERATURE SETTING TO INDIVIDUAL PATIENT NEEDS

WARNING !

USE FOAM RUBBER MATTRESS WHEN THE HEATING MATTRESS IS COLD. GEL MATTRESS WILL COOL THE INFANT IF MATTRESS HEATER IS SWITCHED OFF

WARNING !

FOR ACTIVE AND BIGGER BABIES USE SIDE PANELS OF 23 CM HEIGHT AND ADDITIONAL INNER PANELS. MAKE SURE TO MONITOR AVTIVE BABIES APPROPRIATELY

DANGER !

RISK OF EXPLOSION IF USED IN THE PRESENCE OF FLAMMABLE ANESTHETICS

WARNING !

DISCONNECT SUPPLY BEFORE SERVICING

REPAIRS ON THIS EQUIPMENT TO BE PERFORMED ONLY BY DrägerService OR ITS AUTHORIZED SERVICE CENTERS

CAUTION !

TO MAINTAIN GROUNDING INTEGRITY, CONNECT ONLY TO A "HOSPITAL GRADE" RECEPTACLE

TO REDUCE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER

FEDERAL (USA) LAW RESTRICTS THIS DEVICE TO SALE BY OR ON THE ORDER OF A PHYSICIAN

2 Side panel WARNING labels (2x)

WARNING !

DANGER OF PATIENT INJURY

NEVER LEAVE BABY UNATTENDED WHEN SURROUNDING PANELS ARE DOWN

3 Servicing WARNING labels (2x)

WARNING !

DISCONNECT BOTH SUPPLIES BEFORE SERVICING

4 Height adjustment CAUTION labels

CAUTION !

KEEP SPACE BELOW CABINET CLEAR WHEN LOWERING

KEEP SPACE ABOVE BASSINET CLEAR WHEN RAISING

5 ID label, Dräger Inc. (Importer)

Dräger, Inc.
Critical Care Systems
3136 Quarry Rd
Telford, PA 18969
Tel: (215) 721-6910
Fax: (215) 721-6915

6 ID label, Dräger Medizintechnik GmbH Lübeck

Babytherm

Typ
Fabr. Nr.
V
A
Hz 50/60

Made in Germany
Dräger Medizintechnik GmbH, Lübeck

Technical Data

Ambient conditions

For operation:	
Temperature	20 °C to 30 °C (68 °F to 104 °F)
Atmospheric pressure	900 hPa to 1060 hPa
Relative humidity	0 to 75 %, no condensation
Air velocity in climate rooms	max. 0.3 m/s
For storage and transport:	
Temperature	–20 °C to 60 °C (–4 °F to 140 °F)
Atmospheric pressure	500 hPa to 1060 hPa
Relative humidity	0 to 90 %, no condensation

Radiant heater

Output (irradiance) at 80 cm distance from heater	
Heater level 3	10 mW/cm^2
Heater level 10	30 mW/cm^2
Lights	120 V 23 W for work light, 7 W for night light
Minimum distance required between top of radiant heater and ceiling	>50 cm (20 inches)

Skin temperature measurement	
Sensor	Use only original Dräger sensors (see "Ordering Information", page 65)
Measurement range	15 °C to 42 °C
Accuracy	±0.1°C
Accuracy of entire measurement system	±0.2 °C
Setting range	35 °C to 37.5 °C

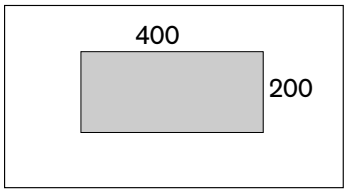
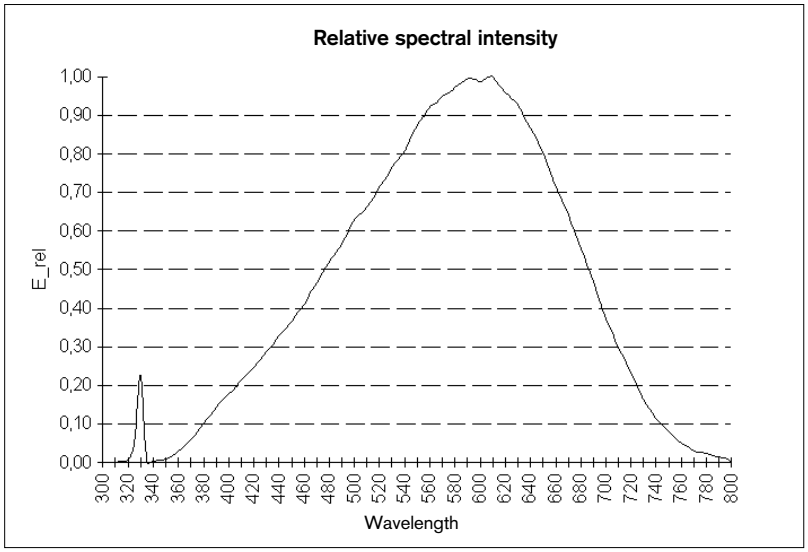
Mattress heater (Babytherm 8010 only)

Temperature measurement:	
Measurement range	5 °C to 45 °C
Accuracy	±0.5 °C between 20 and 42 °C ±2 °C otherwise
Setting range	30 °C to 38.5 °C

Height adjustment (available option)

Height adjustment range	295 mm
Specified operation	Intermittent operation (Maximum operating time of 1 min must be followed by 60 min period for cooling.)

Phototherapy (available option)

Lamps	Halogen 12 V / 50 W (6 needed)
Lighting angle	24°
Irradiance at 80 cm distance from light source and for useable area of 400 x 200 mm	9.5 W/m^2
Area on mattress with specified intensity	
Relative intensity light spectrum	

Operational data

Line voltage	120 V; 50/60 Hz
Power consumption	
Radiant heater	600 W
Mattress heater (Babytherm 8010)	160 W
Infrared light	30 W
Phototherapy light	440 W
Main Fuses	M 15 A UL 198 G, (two)
Electric column (available option)	
Power consumption	560 W
Fuses for electric column	T 6.3 A L 250 V; IEC 127-2/III (two)

Electrical protection class	I
Skin temperature sensor	Type BF
Heating surface of mattress	Type BF
Safety standards	IEC 601-1 IEC 601-2-35 Part 2 (for mattress heater) IEC 601-2-21 (for radiant heater)

Electromagnetic compatibility Tested pursuant IEC 601-1-2

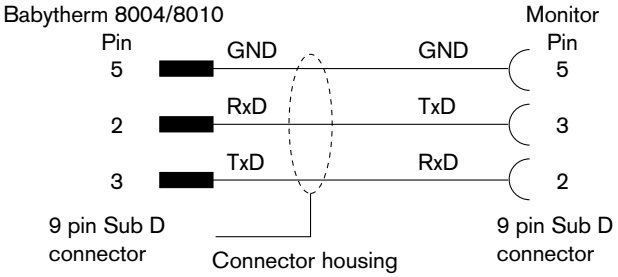
Interfaces (available options)

All interface signals are electrically isolated from any components in contact with patient.
Isolation test voltage is 1.5 kV.

BabyLink™ interface RS 232

Output voltage pursuant RS-232-C

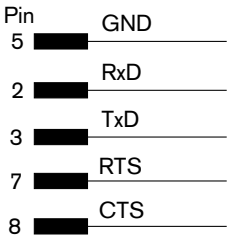
Monitor cable (part no. 83 06 488)
Wiring scheme



Modem interface RS 232

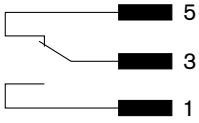
Connection of external modem for service purposes

Wiring scheme



Both RS 232 interfaces and central alarm input are not electrically isolated from one another.

Central alarm

Output	for connection to paging systems (nurse call)
Operation voltage	max. 24 V
Current	max. 250 mA
Power	max. 3 W
Electrically isolated relais contact	

Input	Connection of nurse call output of up to 3 devices. (For each alarm forwarded by any of these devices to Babytherm 804/8010, the red central alarm light will light.)
Electrically isolated relais contact	

Dimensions

Length x Width	1315 x 750 mm (51,8 x 29,5 inches)
Overall height	
unit without height adjustment	1960 mm (77.2 inches)
unit with electric column	1885 to 2180 mm (74.2 to 85.8 inches)
Working height of the bed surface	
without height adjustment	1025 mm (40.4 inches)
unit with electric column	885 to 1180 mm (34,8 to 46,5 inches)
Bed size	750 x 490 mm (29,5 x 19,3 inches)
Tilting of bed	adjustable in small increments maximum of 20 °C down maximum of 15 °C up
Height of surrounding panels	150 mm (5,9 inches)or 230 mm (9,1 inches, recommended for use with cover)
Height of inside panels	70 mm (2,8 inches)

Weight (with one cabinet)

unit without height adjustment	
with mattress heater (8010)	133 kg
without mattress heater (8004)	120 kg
unit with height adjustment	
with mattress heater (8010)	120 kg
without mattress heater (8004)	110 kg

Name and Description	Part No.
Babytherm® 8010, 120 V with mattress heater and skin temperature control	**FR 00 120**
Babytherm® 8004, 120 V with skin temperature control and X-Ray tray	**FR 00 114**
To be specified with order:	
– Set of side panels, height 230 mm **or** set of side panels, height 150 mm	
– 2 inner panels **or** no inner panels	
– Height adjustable column **or** fixed column	
– Without swivel cabinet **or** with one swivel cabinet **or** with two swivel cabinets (models with electric column only)	
– Phototherapy lights integrated into radiant heater	
Options (for retrofitting)	
Set of side panels, height 230 mm	2M 21 034
Set of side panels, height 150 mm	2M 21 032
Inner panel, height 70 mm	2M 20 936
Swivel cabinet	2M 20 638
Cabinet installation hardware	2M 20 868
Interface kit	2M 30 268
Kit phototherapy	2M 30 313

Name and Description	Part No.
Accessories	
Cover	2M 21 030
Cover prop	2M 21 342
Infusion bottle holder	2M 16 520
Patient circuit support arm	2M 21 191
Instrument tray	2M 21 186
Compact rail, addl.	2M 85337
Cable clips (bag of 4)	G 13 171
Monitor shelf, addl.	2M 21 161
Patient circuit support	2M 85 239
Replacement parts / Consumables	
Foam rubber mattress	2M 21 012
Gel mattress	2M 20 827
Mattress cover sheet	2M 21 272
Skin temperature sensor, yellow (box of 10)	2M 21 916
Skin temperature sensor, white (box of 10)	2M 21 915
Replacement adhesive pads (box of 100)	2M 21 734
Halogen lamp 12 V, 50 W	2M 30 084
Lamp for work light	2M 30 160
Lamp for night light	2M 30 161
Silicone U-grommet	2M 20 434
Service documentation	on request

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These Instructions for Use apply only to
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with Serial No.:

If no Serial No. has been filled in by Dräger these Instructions for Use are provided for general information only and are not intended for use with any specific machine or device.

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